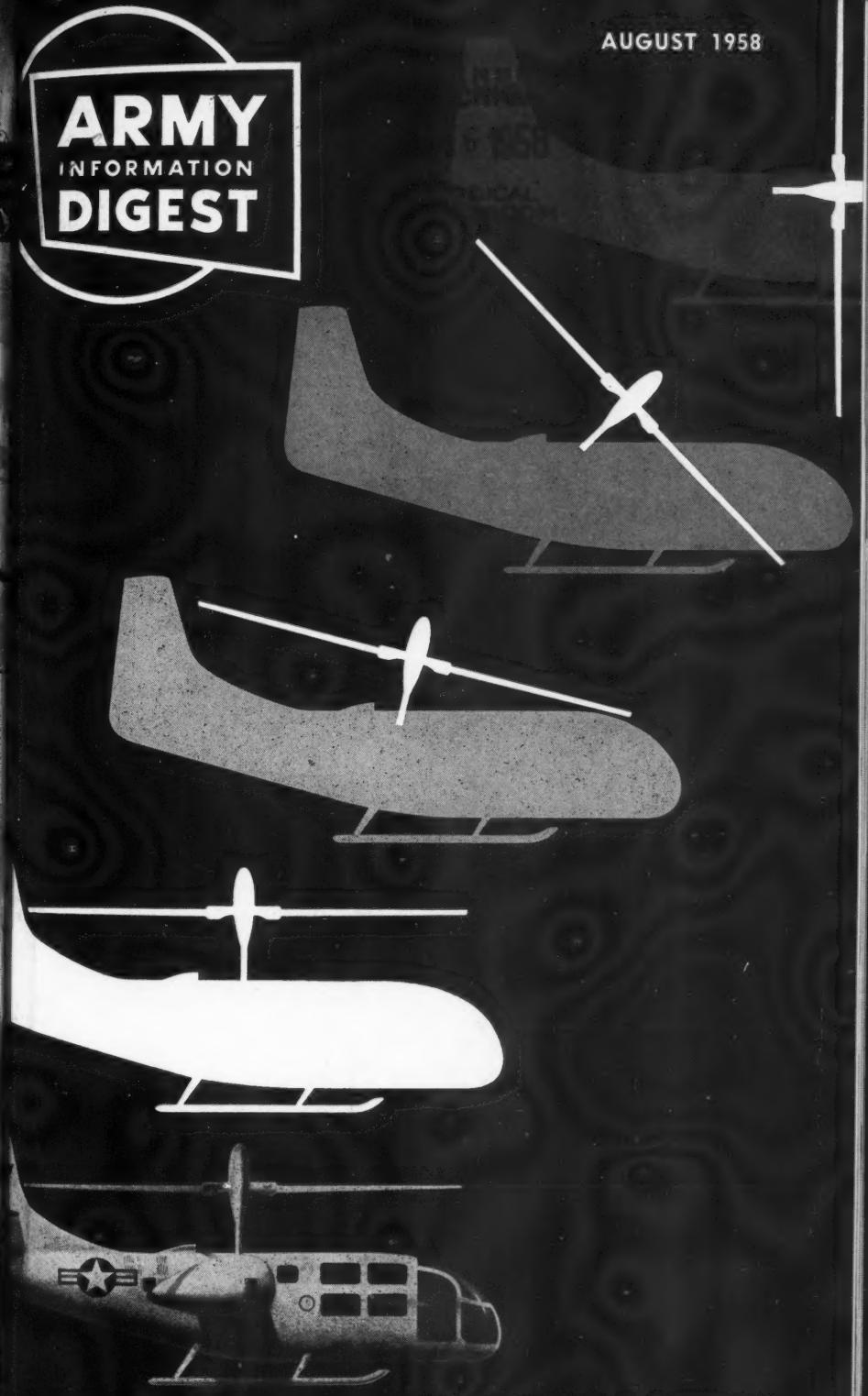


AUGUST 1958

ARMY
INFORMATION
DIGEST



THE OFFICIAL U. S. ARMY MAGAZINE



ARMY INFORMATION DIGEST

THE OFFICIAL MAGAZINE of the DEPARTMENT OF THE ARMY

The mission of ARMY INFORMATION DIGEST is to keep personnel of the Army aware of trends and developments of professional concern.

THE DIGEST is published under supervision of the Army Chief of Information to provide timely and authoritative information on policies, plans, operations, and technical developments of the Department of the Army to the Active Army, Army National Guard, and Army Reserve. It also serves as a vehicle for timely expression of the views of the Secretary of the Army and the Chief of Staff and assists in the achievement of information objectives of the Army.

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THE Bell XV-3 convertiplane (*above and front cover*) operates as a helicopter for take-offs and landing. Rotors tilt forward to perform as conventional propellers for cruising and high-speed flight. Developed for the Army under a joint Army-Air Force contract, this experimental aircraft is one of several types under study as reported in "Army Aviation=Battlefield Mobility."

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ARMY AVIATION

Brigadier General Bogardus S. Cairns

SUCCESS of the Army on a future battlefield will depend largely upon its ability to move swiftly and decisively. In this field, Army Aviation will undoubtedly play an important part.

Throughout history, mobility has proven essential to victory in battle and now, with increased dispersion made mandatory by the threat of nuclear weapons, it is more than ever an axiom of war.

Twenty-five years ago the cavalry still relied on the horse for mobility as had Genghis Khan centuries before. In World War II, the Army

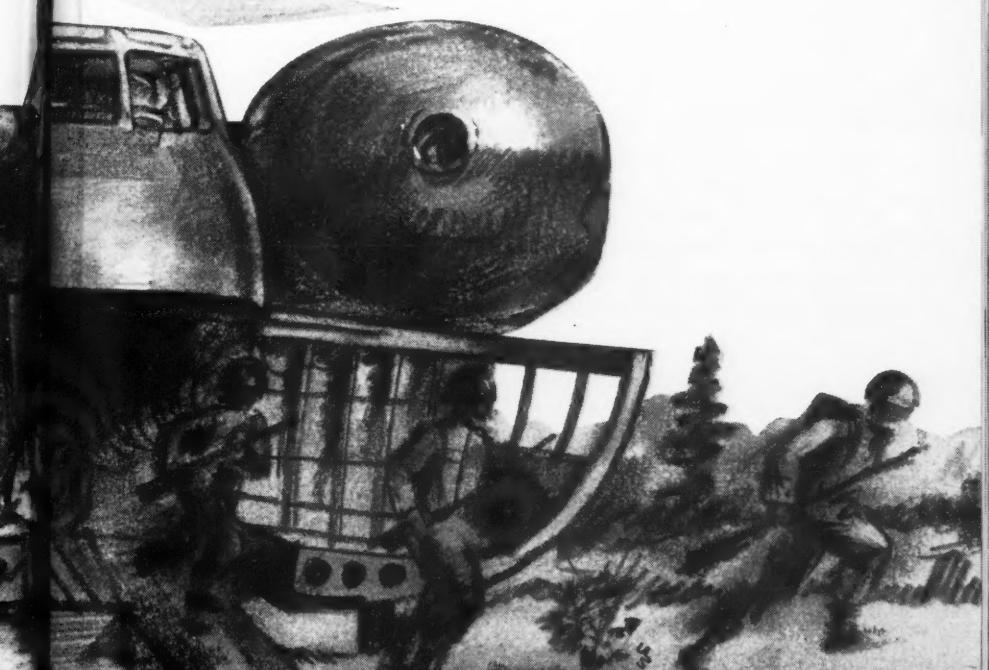


BATTLESFIELD MOBILITY

swapped the horse for the tank and developed its powerful armored divisions and armored cavalry regiments to give it the mobility essential to victory. Since then, considerable development effort has been directed toward improving the maneuverability of ground vehicles and their capability for overcoming the accidents of terrain.

However, the greatest potential improvement in mobility lies in increased use of aerial vehicles. Under optimum conditions today surface vehicles can provide 15 to 25 mph march speeds. Use of air not

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"Army Aviation must . . . be capable of living and operating in the same terrain and under the same conditions as the rest of the Army. Its aviators must have a thorough understanding of the nature of ground warfare, and of the tactics and techniques of infantry, artillery and armored forces."

only increases this speed fourfold or better but also provides much greater flexibility.

ARMY AVIATION is organic to the Army. Its mission is to augment the ability of the Army to conduct effective ground combat operations. The mobility it provides must be, and is, immediately responsive to the demands of the field commander.

Army Aviation must therefore be capable of living and operating in the same terrain and under the same conditions as the rest of the Army. Its aviators must have a thorough understanding of the nature of ground warfare, and of the tactics and techniques of infantry, artillery and armored forces. Their aircraft must be capable of operating from small and unprepared fields, without elaborate facilities for maintenance, support and operation.

BRIGADIER GENERAL BOGDUS S. CAIRNS is Commanding General, United States Army Aviation Center, Fort Rucker, Alabama. Opinions expressed here reflect the views of the author and are not necessarily the finally approved concepts of the Department of the Army.

Army Aviation does not duplicate, supersede or replace the Air Force in any of its traditional roles or missions. It is designed to fill the gap between the soldier's capability on the ground and the operational limitations of the extremely high performance aircraft with which the Air Force is presently equipped. The Air Force with its multi-mach aircraft is moving out of the environment of the Army. Its efforts are oriented away from the low and slower flight regimes of Army Aviation interest.

HISTORICAL DEVELOPMENT

THE date 6 June 1942 is perhaps the most significant one for Army Aviation as it is known today. On that date aircraft were first assigned as an organic element of the Army divisional and certain non-divisional artillery units.

This decision was reached as the result of successful tests conducted during the 1941 Louisiana maneuvers. Light planes, provided by the civilian light plane industry and flown by civilian and Army pilots, had been tested primarily for the adjustment of artillery fire, but were also used for liaison purposes. Their value proved so great to the ground commander that two planes had been assigned to each Field Artillery Battalion.

During World War II both in Europe and in the Pacific, a vast majority of all observed artillery fire was directed from these organic aircraft, popularly known as "cubs." By the end of the hostilities the cub was firmly entrenched in the organization of the division and in the hearts of the soldiers.

After VJ Day, the Army Aviation program was drastically re-



Basic aircraft of Fixed Wing Tactical Transport Company is the U1-A Otter, capable of carrying 1 1/2 tons or nine equipped troops.



The L-19 Bird Dog, above, is the Army's standard observation-type aircraft. Below, an L-4 marks first use of Army Aviation in combat in World War II.



duced. Progress made during the 1946-50 period was confined generally to the development of better aircraft, ultimately leading to the L-19 "Bird Dog" which is still in service. During this period, the helicopter also made its appearance. Procurement of 64 H-13B helicopters in 1948 constituted the first large quantity helicopter procurement by any service or industry. Both the H-13 "Sioux" reconnaissance helicopter and the H-19 "Chickasaw" utility helicopter were used in the Korean War.

During this conflict it became apparent that a reorganization of the aviation structure was necessary. Provisional Aviation Companies were developed at Division and Corps level to give added control and flexibility. Now the great potential of Army Aviation became more apparent. It provided the commander the means of rapidly transporting supplies to areas inaccessible to ground vehicles. It proved invaluable in rapid evacuation of wounded directly from the

battlefield to hospitals. Small aircraft also served widely for reconnaissance and surveillance.

PRESENT ROLE

TODAY the capabilities of Army Aviation have been extended well beyond the old concept of "aerial observation posts" and "taxi service." From its initial role of providing aviation support only for the artillery, Army Aviation now is incorporated in three combat arms and four services.

Army Aviation now is found principally in three types of organization—Division Aviation Companies of the pentomic divisions, Light Transport Helicopter Companies, and Fixed Wing Tactical Transport Aviation Companies.

DIVISION COMBAT AVIATION COMPANIES are being organized along similar lines in each of the Army's infantry, armor, and airborne divisions. They are equipped with observation airplanes and reconnaissance type helicopters to provide artillery adjustment, terrain

Long employed as a basic training aircraft, the H-23 Raven observation-type helicopter flies over the Army Primary Helicopter School.





First helicopter designed especially for the Army, the Bell HU-1A Iroquois should be in full production by 1959, in troop use by 1960.

reconnaissance, and transportation for commanders and their staffs.

In addition such companies have a limited number of L-20 "Beavers," a utility type airplane, with instrument capabilities, and greater lift and longer ranges than the L-19. Also included are utility or light transport helicopters sufficient to transport patrols or supplies about the Division zone of action. The company also has the capability for evacuation of battle casualties.

TRANSPORT HELICOPTER COMPANIES are equipped entirely with twenty light transport helicopters of either the H-21 "Shawnee" or the H-34 "Choctaw" types. These companies are capable of lifting the combat elements of a reinforced Infantry Company within a radius of approximately 75 miles, to provide real mobility to our ground forces.

They can land in any open field close to bivouac or assembly areas, load in a matter of minutes, and fly at tree-top level directly to the area of deployment, there to un-

load the troops on their planned position. A well-trained unit can land, unload and clear the area in less than one minute. Companies of this type are assigned to the Field Army for further attachment to Corps or Divisions as required.

FIXED WING TACTICAL TRANSPORT COMPANIES, equipped with 16 U-1A "Otter" aircraft, are capable of transporting approximately half an Infantry Company for about 300 miles.

These are the principal aviation organizations in the Army's troop basis today. They are the operating units—exclusive of the Transportation Corps maintenance units which keep them flying.

TRAINING FACILITIES

IN the overall Army Aviation training program, there are, in addition to Fort Rucker, five other major training sites. These are the Primary Fixed-Wing School at Camp Gary, Texas; Camp Wolters, Texas, present site of the Primary Helicopter School; Fort Sill, Oklahoma, and Fort Riley, Kansas,



Smoke veils an H-19 Chickasaw as it fires a rocket load during a demonstration of aerial combat reconnaissance concepts.



Rocket load from H-21 Shawnee strikes on target during demonstration while (below) an H-25 fires 1.5 inch folding fin aerial rockets.





Recently called the most heavily armed helicopter in the world, one look at this H-34 Choctaw indicates why.

where aviation units are organized and welded into trained companies prior to assignment to their programmed station; and finally, Fort Eustis, Virginia, where the Transportation School conducts depot and field aviation maintenance courses.

Fort Rucker, home of the U. S. Army Aviation Center, comprises some 62,000 acres, manned by 3,900 military and 1,300 civilians. The post population also includes some 1,500 students—600 officers, most of whom are in flight training, and 900 enlisted men, mostly in aircraft mechanic training.

Approximately 660 aircraft are utilized to support the flying program and test activities at the Center. Of this number, there are about 390 helicopters and 270 airplanes. These aircraft flew a total of 255,000 hours during 1957.

FUTURE OUTLOOK

CURRENTLY plans are under consideration to provide the Corps

Commander with a company of aircraft tailored specifically to his needs. Under these plans, the Corps Artillery Commander would also be provided with a company of aircraft for observation, artillery fire adjustment, and damage assessment missions.

At Army level, requirements exist for additional transportation for the commander and his staff. The supporting Aviation Company will reflect this requirement in the numbers of command and utility aircraft provided. Generally, this Aviation Company would follow the same general organization pattern previously mentioned, modified only as necessary to fit the missions and functions of the headquarters to which assigned. The intention is to develop a standard Army Aviation company organization much like existing standard artillery battery and infantry company organizations.

Because of the maintenance, personnel and equipment costs in-

herent in a program of this magnitude, transport aviation for further support would be concentrated under Army control. Plans call for an Aviation Group containing a variable number of battalions—four being the average—each to contain five companies. The company mission would be essentially the same as for the transportation companies discussed—*i.e.*, tactical transport of troops, and movement of supplies in combat.

THERE are two more fields for which significant numbers of aircraft are planned in the Type Field Army.

The Surgeon General's office has just completed its evaluation of aeromedical evacuation units and is preparing to establish companies of rotary-wing aircraft whose primary purpose will be medical evacuation. The number of units and their composition is still being developed.

In both the "airborne" and the "heavy" missile commands, a section or platoon of aircraft will provide command and staff transportation, aerial observation, and damage assessment capabilities.

In the Army Missile Command, Medium, a new concept in Army Aviation appears—a form of sky cavalry. This organization is intended to be a passive target acquisition and intelligence gathering agency. It employs passive intrusion into the enemy area by use of visual, photographic and electronic means. It is not intended that this activity fight to obtain information, although it can be used in moving patrols.

It is interesting to note that, under present plans, the Missile

Command, Heavy, will be provided with High Performance, Short Take-off and Landing, Army Observation Aircraft (HPAOA). This aircraft is currently on the drawing boards, and is programmed for the immediate future. In the interim, the Army has borrowed from the Air Force and has under test three T-37 jet trainers to develop organization, tactical doctrine, materiel requirements for the HPAOA.

CONCEPTS DEVELOPED

ONE of the missions assigned to the U. S. Army Aviation School is the development of doctrine, tactics and techniques for the employment of Army Aviation by the combat arms and services. For the past year and a half, the Combat Developments Office has been working to develop a completely air-mounted, air mobile, fast moving, hard hitting unit capable of fulfilling the traditional combat reconnaissance roles of cavalry on the dispersed modern battlefield. This concept is called Aerial Combat Reconnaissance.

Under this concept, aviation units are tailored to live and fight completely divorced from any fixed base or installation. Considerable experimentation with armed helicopters yielded gratifying results.

The suppressive fire aspect, utilizing similarly armed helicopters, has been battle tested by the French in North Africa against the Algerian rebels. The French found that arming the troop-carrying helicopters was mandatory for the suppression of enemy ground fire.

AT the Army Aviation School, experiments are being conducted with an Aerial Combat Recon-

naissance Company, which has all of the essential elements of a combat reconnaissance force.

In this Company, command is represented by the troop commander and his executive mounted in a reconnaissance helicopter. Reconnaissance is provided by a platoon of twelve armed reconnaissance helicopters plus the platoon leader. These are armed with machine guns and/or rockets.

An Infantry Platoon is mounted in four light transport helicopters equipped with protective firepower in the form of rockets, machine guns and rifle fire. Four light transport or utility helicopters are armed with rockets to provide a base of fire.

A logistical element of light transport helicopters is provided to move gasoline, ammunition, food and other supplies. (Also in the element is an H-13 or H-23 for medical evacuation.)

Note the absence of ground vehicles—a factor which permits the troop to operate without regard to condition of the terrain.

The organization itself is flexible in that it can be grouped for combat either vertically or horizontally or in any combination. In the tests, satisfactory results were shown with various combinations of these elements employed in advance, flank and rear guard problems, delaying action, reconnaissance and counter-reconnaissance action and seizure of small critical terrain features.

If the United States should have a requirement for an Aerial Combat Reconnaissance Company anywhere in the world, in areas where few roads and small forces demand

true mobility and freedom of maneuver, such a unit as this could be organized using existing weapons and aircraft. In fact, it could be expanded to completely air-mobile combined arms, Battle Groups or brigades.

These concepts, it should be noted, are still in the development stage and have not been finally approved.

EQUIPMENT

PRESENT-DAY Army Aviation equipment is in a state of development much as was the automobile during the period following World War I. Recognizing this, the Army through its research program has let a series of contracts to various aircraft manufacturers to develop new concepts in Vertical and Short Take Off and Landing (VTOL and STOL) aircraft which it will need tomorrow.

Out of these studies, the Army ultimately hopes to realize an aircraft having the landing and hovering capabilities of the helicopter, teamed with the speed and inflight stability of the airplane. While these studies are being made, new tactical concepts and techniques are being experimented with and perfected so that when the new vehicles do appear, it will be possible to exploit their capabilities to the fullest degree.

Army Aviation has come a long way since its inception in the minds of a few Army officers only a few years ago. It has attained a magnitude and an importance which few could foresee. In the future it will continue to make manifest its full potential in assisting the Army to fulfill its mission.



WHETHER evacuating wounded, lifting heavy loads, or lending an assist to ground troops, the versatile helicopter is at home in many roles in today's Army. At top is the H-1 Sioux which won fame by its mercy missions during the Korean War, here equipped with side stretchers. Center is the H-34 Choctaw, giving a jeep a lift over impassable terrain. Bottom, the H-37 Mojave hauls an Honest John.



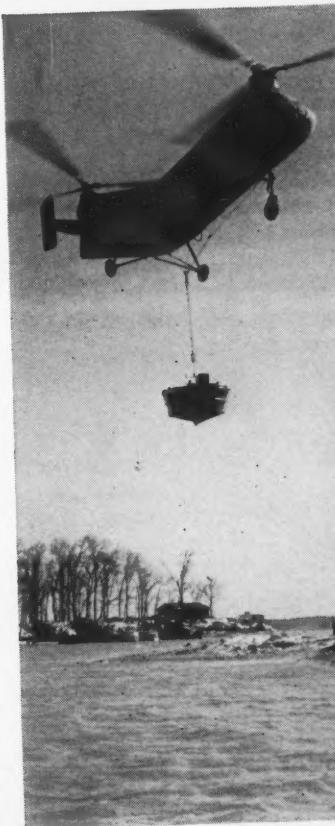
THE VERSATILE "CHOPPER" . . .



... can lift a 6 x 6 . . .



... a howitzer, or rations . . .



... or build a bridge . . .

*It can be
refueled
in mid-air,
transport
troops . . .*



*. . . or
carry
away a
disabled
airplane.*

ARMY TRENDS

HIGHLIGHTS OF ARMY PROGRESS

RESEARCH ■ DEVELOPMENT ■ WEAPONRY ■ ORGANIZATION ■ TRAINING

TACTICAL REDSTONE FIRING. Marking another milestone in missilery, Army troops on 3 June successfully tested the combat readiness of the Redstone by launching the liquid propelled, ballistic missile under tactical conditions at White Sands Missile Range, New Mexico. The firing by the 40th Field Artillery Missile Group (Redstone) marked the first time that the missile had been launched inland. Employing light-weight erection equipment instead of giant gantry cranes as used at Cape Canaveral, the launching was carried out from desert sands instead of a concrete pad to demonstrate Redstone's versatility in any terrain.

COMBAT SURVEILLANCE. The Army is developing medium- and short-range reconnaissance drones to carry radar, infra-red, television, or conventional camera equipment. Small, portable radar sets to cover avenues of approach to battle groups, and a new airborne photographic reconnaissance camera that will provide its own illumination by automatic flare ejection are also being developed to help the ground soldier find, fix and destroy the enemy—not only at long ranges, but also just over the next hill.

SAFEGUARDING DEFENSE DATA. A revision of AR 380-5 (Safeguarding Defense Information)—recently approved for publication—provides for the automatic downgrading of Army-originated information from **TOP SECRET** to **SECRET** and from **SECRET** to **CONFIDENTIAL** after the lapse of three years unless the originating agency renews the original classification for an additional three-year period. Another provision gives greater latitude to commanders in such matters as the conduct of periodic inventories of **TOP SECRET** material and in the use of continuous receipts for **SECRET** material.

These revisions, it should be emphasized, are not intended as relaxations of security controls. Rather, the fact that greater latitude is allowed commanders to devise security controls to fit particular situations means that they have even greater responsibility to see to it that true security exists within their commands.

Commanders will not subscribe to the theory that security controls should be relaxed because they are burdensome administratively. These controls are logical and necessary. It is *overclassification* that makes them burdensome. Commanders should establish a goal of reducing the number of **TOP SECRET** documents to the point that one **TOP SECRET** control officer could control them all for an entire Army Headquarters.

Executive Order 10501, the basis for security regulations, states:

"Documents shall be classified according to their own content and not necessarily according to their relationship to other documents. References to classified material which do not reveal classified defense information shall not be classified."

Introducing the Army's "fire brigade" for brush-fire war

STRAC—Mobile

SPPEARHEAD of mobile combat-ready forces—poised and ready to be launched to apply any required amount of striking power in any situation anywhere in the world—is the Strategic Army Corps, or STRAC, of the United States Army.

Designed to meet initial requirements of a limited war, or to provide initial reinforcements to overseas troops in a general war, STRAC's mission is to be operationally ready on a moment's notice. STRAC can place fully armed and equipped elements into action on a few hours' notice, with the remainder of the troops ready for phased deployment as air and sea-lift is made available.

At present STRAC consists of four pentomic divisions with striking power ranging from the bayonet to Honest John missiles, plus a headquarters organization. The divisions are the 101st Airborne, Fort Campbell, Kentucky; 82d Airborne, Fort Bragg, North Carolina; 4th Infantry, Fort Lewis, Washington; 1st Infantry, Fort Riley, Kansas. Headquarters, XVIII Airborne Corps is at Fort Bragg, North Carolina.

Both of STRAC's airborne and infantry divisions have organic atomic capability. A high state of equipment readiness is maintained, with high priority units equipped with the M-264 truck, popularly known as the Mechanical Mule, the Honest John missile, 106mm recoilless rifle and other modernized materiel.



Striking Force in Readiness

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UNDER conditions short of an actual alert, command of STRAC is vested primarily within the Department of the Army. Except for a number of technical service and some specialized units, the majority of STRAC units have been assigned to the Commanding General, U. S. Continental Army Command. Authority for logistics coordination has been delegated to the Commanding General, XVIII Airborne Corps.

The Commanding General, USCONARC supervises training and inspections to insure that units of STRAC are maintained in an appropriate operational readiness status, while the Commanding General, XVIII Airborne Corps insures that necessary logistical planning is properly coordinated.

After STRAC (or its elements) is deployed to an oversea theater, command of the force would pass to the Commander of the Joint Chiefs of Staff established command in the area of operations.

TO MAINTAIN the business end of the STRAC spearhead in razor-sharp condition, Headquarters, USCONARC will conduct five maneuvers and an advanced command and communications group exercise during 1958-59.

Whether in training or on the move to some world trouble spot, STRAC lives up to its motto—Skilled, Tough, Ready Around the Clock.



SKILLED

in all the crafts of war, men of the Strategic Army Corps practice constantly the many and diversified duties of a modern soldier utilizing the latest weapons, welded together in a

TOUGH

organization, trained to strike with bayonet, rifle or atomic missile. Composing the "fire brigade" of the Army, with initial elements continually on the alert and

READY

to move in a matter of hours with guns, vehicles and missiles to a departure airfield or port of embarkation, these men and units are poised to strike where, when and if needed anywhere

AROUND the

globe; and just as speed adds to the penetrability of a projectile, STRAC utilizes laws of kinetic energy to enhance its striking power, to gain initial advantage in the crucial battle against space, time and the enemy, so that whenever the

CLOCK

of destiny strikes, it will find battle-ready forces capable of turning the tide of battle in a limited war operation, or blunting a massive general attack, should the situation require it.

RELATIONSHIP OF STRAF AND STRAC

U.S. ARMY forces overseas are backed up by the Strategic Army Force (STRAF) consisting of seven Army divisions and substantial supporting units located in the United States.

Hard core of STRAF is the Strategic Army Corps (STRAC)—a four division force which functions as the "fire brigade" of the Army. This versatile force—poised and ready to fight, day and night, around the clock—is kept in a high state of readiness, prepared to move on short notice anywhere in the world.

STRAC's balanced structure, with supporting units which give it staying power, makes it the only mobile striking force capable of sustaining itself in extended ground combat. It is ready to employ an arsenal of weapons ranging from the bayonet to atomic warhead, applying the appropriate degree of force which can best avoid the risk of all-out nuclear war.

In effect, STRAC is that element of the Army which is maintained in the continental United States to meet or reinforce any initial emergency requirements throughout the world. An austere force, it would be augmented as required to meet specific situations.

In an emergency, for example, elements of STRAC would be deployed to meet contingency requirements. Meanwhile, new units would be designated to STRAC, and reserve component units would be mobilized to reconstitute the Strategic Army Force. Thus adequate readiness would be maintained both for general war and to meet the requirements for any additional units necessary to sustain a limited war.

STRAC COMMANDERS. In meeting at Fort Bragg, Major General Robert F. Sink, Commanding General, XVIII Airborne Corps, is flanked by STRAC commanders: Maj. Gen. W. C. Westmoreland, 101st Airborne; Maj. Gen. D. H. Buchanan, 1st Infantry; Maj. Gen. H. H. Howze, 82d Airborne; and Brig. Gen. John H. McGee, 4th Infantry.



Capability for a broad range of warfare marks

Советская армия The Soviet Army

IN THE midst of its missile and nuclear programs, the Soviet Union has given full attention to its army. It has re-equipped its Army Ground Forces with newly developed tanks, guns, armored personnel carriers and amphibious

vehicles; and unit organization and tactics have been adjusted for either nuclear or non-nuclear war.

The Soviet Army has prepared for the use of nuclear weapons in tactical operations. The initial concept emphasizes surprise, speed,



4th B the Nuclear Era aTOMHOM Beke

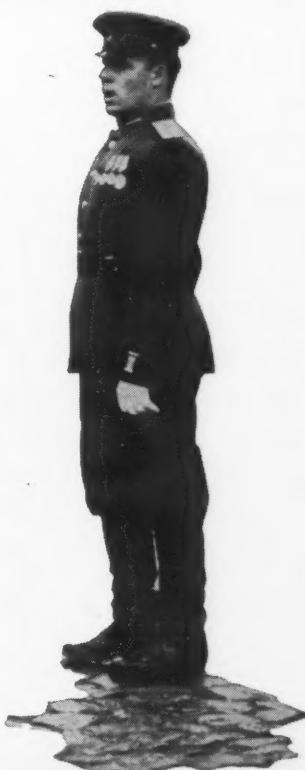
and dispersion, while retaining the form of conventional Soviet tactics. New weapons and equipment have been accommodated by alterations in organization and tactics. As other new weapons are introduced, particularly in the missile field, further changes are likely.

THE PRINCIPAL changes in the last few years have been toward increasing the speed and versatility of movement and the range and weight of firepower.

Speed and cross-country mobility are the purposes behind the new vehicles, which are designed to allow for rapid dispersion, concentration for an assault, and redisposition to avoid presenting targets for nuclear weapons. Amphibious vehicles, both tanks and armored personnel carriers, are intended to facilitate river crossings without halt for a build-up. The troops also have new and additional signal equipment for control in fluid situations. Speed attained in this manner will be equally suitable for a non-nuclear battlefield.

Firepower has been increased by re-equipment with new carbines and machine guns and new and

"In the present direction of its development, the Soviet Army is likely to maintain its capability to fight either a nuclear or non-nuclear war."





Infantry officer candidates parade through famed Red Square during a display of Red military might.

"In the Soviet Army Ground Forces there are two categories of divisions. The first consists of line divisions of which there are three basic types—tank, mechanized and rifle. There are 100 rifle-type divisions and a total of 75 armored-type divisions. The second category includes support divisions, i.e., antiaircraft artillery, ballistic missile, breakthrough artillery, gun artillery and rocket artillery divisions. These types are smaller than line divisions; the titles describe their principal armament and, therefore, imply the mission for which they are best suited.

"Soviet line divisions retain the triangular structure which was evolved during World War II. Each division organizes for combat around three basic regiments, which are reinforced by divisional and attached units. Certain service and support units are common to each basic type of division. Each division has artillery equipped with one or a combination of these weapons: 85mm guns, 122mm and 152mm howitzers, 160mm mortars. An antiaircraft artillery regiment protects divisional installations

"Other organizations common to each division include a sapper (combat engineer) battalion, signal battalion, medical battalion, reconnaissance battalion and chemical company, as well as headquarters, transport, maintenance and service units. In keeping with the emphasis on mobility, the sapper battalions are organizationally provided with bridging capable of bearing divisional loads and with tracked and wheeled amphibious carriers. A tremendous increase in radio and electronic equipment assures better command control over the dispersed and mobile division elements."

*From "The Soviet Army" (A Department of the Army Assessment)
15 May 1958, page 5*

heavier artillery, as well as missiles. (See "The New-Look Soviet Weapons," March 1958 DIGEST.)

In seeking both speed and firepower, the Soviets have emphasized armor. Of their 175 divisions, 55 are mechanized and 20 are tank divisions. Both types of divisions are tank forces with infantrymen transported in armored personnel carriers, the principal difference being that the mechanized division has more and the tank division fewer infantrymen.

THE Soviets recognize the fire-power inherent in nuclear weapons, but consider them as an addition—though a tremendously destructive addition—to the weapons family. They appear to be prepared to deliver these weapons by aircraft or missile, or both, and possibly from guns.

"The principal changes in the last few years have been toward increasing the speed and versatility of movement and the range and weight of firepower."

The new gases, and the old ones as well, are frequently linked with nuclear weapons in Soviet military literature. The Soviets apparently think that employment of tactical nuclear weapons will lead to the use of toxic weapons.

TROOP TRAINING

TRAINING in use of both the new and the old implements of war is continuing throughout the Soviet Army. There is little basis for judging the effectiveness of Soviet delivery systems for tactical nuclear weapons, but troop exercises usu-

Soviet gun crews work out with a 57mm and antitank gun M1943 during field exercise behind the Iron Curtain.





Principal Soviet tank is the improved T-54 with 100mm gun, here deploying in streets of Budapest during 1956 uprising.

ally involve simulated bursts, either by enemy or friendly troops.

Exercises have been thorough, but have not always come up to the expectations of Soviet commanders. The commanders apparently expect to make up whatever shortcomings exist by being ready to send a large force into the field.

A pool of fully trained reservists has been built up by the process of conscripting annual increments for about three years' training. This reserve strength has been kept

at a high level by the size of the Army Ground Forces, which have been maintained at a personnel strength of about 2,500,000 men for the more than ten years since World War II. Reductions have been announced, but there is no evidence that any have been made beyond a small-scale weeding out of unreliables and incompetents.

COMBAT ORGANIZATION

THEIR present divisions give the Soviets a sound basis for mov-

"The Soviet Army and Navy are the two military services that comprise the armed forces of the Soviet Union. The Army consists of Ground Forces, Air Forces and Antiair Defense Forces. In the Ground Forces there are 2½ million men and 175 line divisions. There are a total of approximately 1 million men and 20,000 planes in the Air Forces of the Soviet Army and Naval Aviation. The Navy has some 500 submarines, 25 modern cruisers and 130 modern destroyers. Soviet military doctrine is based on well-coordinated employment of these force components under a single commander."

*From "The Soviet Army" (A Department of the Army Assessment)
15 May 1958, page 1*

ing rapidly in Eurasia. Some of the divisions, in forward areas, are ready for action and others are ready for quick filling up and expansion.

Nearly all of the Soviet divisions, with their supporting elements, are organized into armies. The field army headquarters are staffed and strategically located.

Cadre staffs of the highest field organization, the *front*, are now in the headquarters of active military districts and the "groups of forces" in East Germany and Poland.

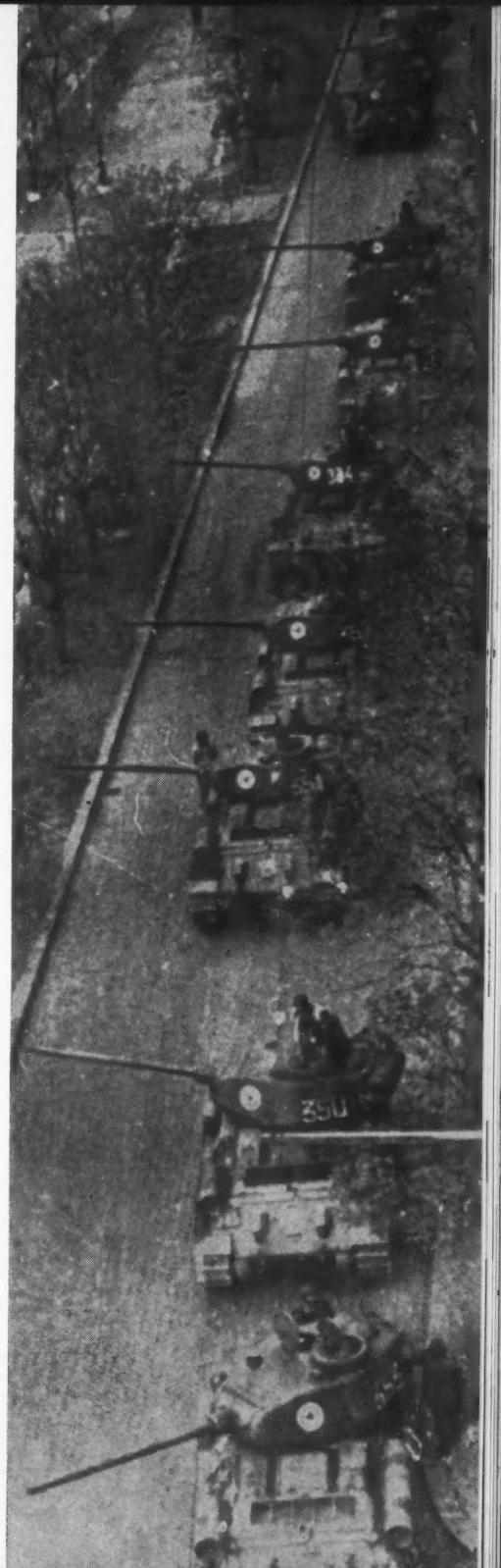
The *front* is normally commanded by a marshal. It would include several field armies and one or more mechanized armies, plus at least one air army of about 1,000 aircraft and several artillery divisions, some equipped with free rockets and ballistic missiles. In addition, it would have several antiaircraft divisions, probably with both automatic guns and antiaircraft missiles. Engineer, signal, construction, and service elements round out the *front*.

THE main maneuver force is the army, of which there are two types—the combined-arms and the mechanized.

The combined-arms army has two or three rifle corps, each containing rifle and mechanized divisions, and an artillery brigade, an antitank brigade, an antiaircraft division, and a heavy tank and assault gun regiment.

The mechanized army really is an oversized armored corps, with about four mechanized and/or tank divisions.

The divisions are still triangular, but some of their elements have been changed and they have been



"A recent change has been made in the importance given to the element of surprise. Surprise was formerly considered to be only a transitory factor. Under conditions of modern warfare, however, the Soviets have given it added importance. For the contemporary battle, speed, surprise and dispersion are being emphasized within the framework of modified conventional tactics."

From "The Soviet Army" (A Department of the Army Assessment)
15 May 1958, page 8

adapted to accommodate the new equipment. The tank company, for example, has been increased from 10 tanks to 16. This has raised the strength of the tank division from about 250 tanks to about 450; and the mechanized division from about 200 tanks to about 300. In the rifle division, tank strength has been raised from about 50 to about 75. The principal tank is the improved T-54, with 100mm gun.

Personnel strengths have been increased somewhat, bringing the divisions into the 13- to 15,000-man range.

Current organization facilitates the Soviet practice of using reinforced battalions and regiments as basic tactical units. This practice enables the Soviets to fight in fairly open formations when the disposition of opposing forces permits.

The rifle regiment contains artillery, assault guns, recoilless weapons, engineer, signal, and chemical troops. Tanks are added from divisional troops. In the armored divisions, preliminary regrouping

also is minimized by the presence of organic infantrymen.

For protection against nuclear weapons, engineer and reconnaissance units have been strengthened. Extensive digging in of personnel, equipment, and supplies is prescribed, along with dispersal, to minimize atomic effects. Radiological reconnaissance units are to mark contaminated areas and find safe routes of advance.

DOCTRINE AND TACTICS

THE Soviets have not yet introduced any novel tactical concepts. They propose to employ their basic tactical principles, only boosting the punch and heightening the tempo.

Doctrinal literature, the new equipment, and the high proportion of armored troops, combine to illuminate the kind of warfare the Soviets look forward to.

In event of war, they apparently intend to move forces rapidly and to avoid, as much and as long as possible, the concentrations that make tempting nuclear targets.

"A reserve of trained manpower is annually replenished as the [Soviet] Army, Navy and internal security forces conscript a new age class and release those who have completed their compulsory military service. The length of conscript service varies from three years in the Army to four years with the Navy. The Soviet system of universal military training turns out about 700,000 fully trained reservists every year who are subject to immediate recall until they reach 50 years of age."

From "The Soviet Army" (A Department of the Army Assessment)
15 May 1958, page 1

The loose formations of the meeting engagement will be used as long as flanks can be found for the standard tactics of envelopment. Where there is no way around, the Soviets expect to create flanks by making a breakthrough.

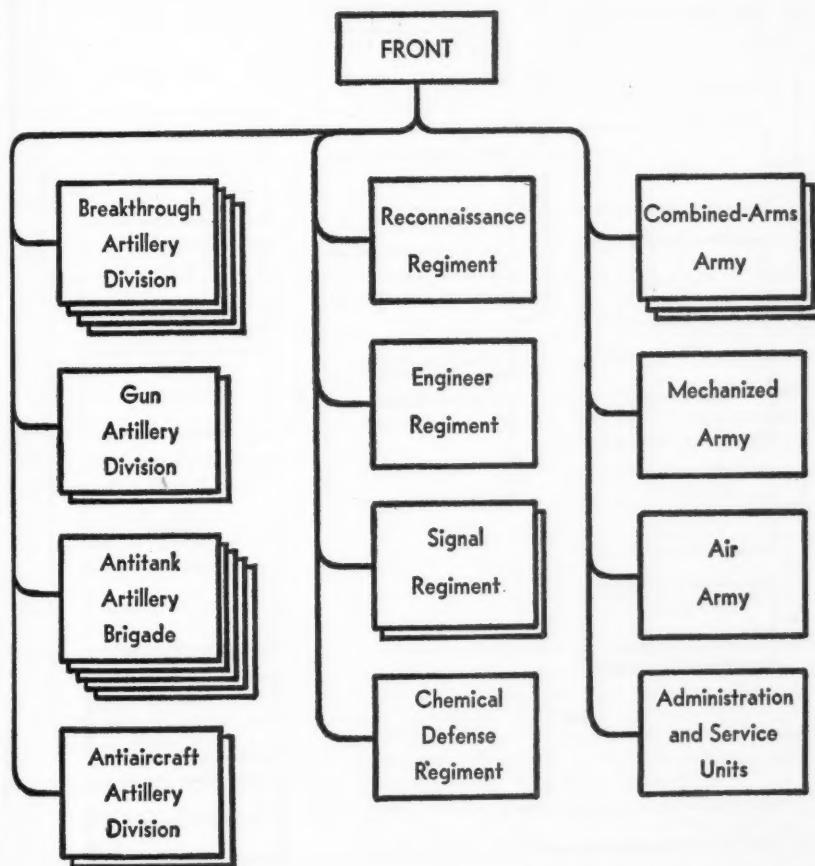
In this operation, the Soviets plan to keep the assaulting forces dispersed and dug in until the last practicable moment, assembling them at vehicular speeds for the attack. They expect to be safe from nuclear strikes within a matter of hours—as soon as they can

"Exercises have been thorough, but have not always come up to the expectations of Soviet commanders. The commanders apparently expect to make up whatever shortcomings exist by being ready to send a large force into the field."

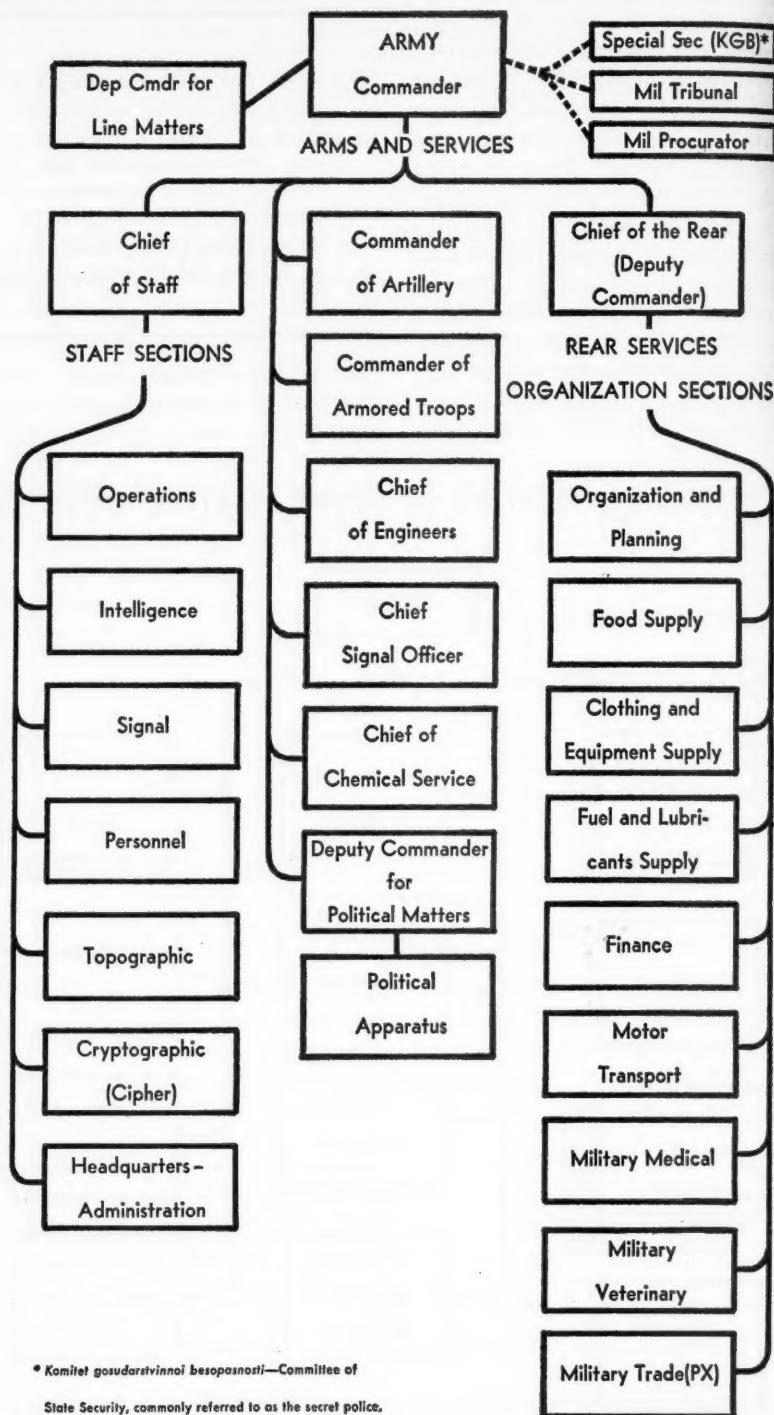
close with the enemy forces.

Where a breakthrough is necessary, the mission will be to force

TYPE ORGANIZATION OF SOVIET WARTIME FRONT



TYPE ORGANIZATION OF A SOVIET ARMY HEADQUARTERS



* Komitet gosudarstvennoi besopasnosti—Committee of

State Security, commonly referred to as the secret police.



Crew of tracked amphibian takes aboard a 76mm divisional gun M1942, preparatory to crossing a water obstacle.

an opening for armor—usually a mechanized army, which is to strike at deep objectives—in dispersed formation once it is clear of the enemy defense area.

Nuclear weapons, if used, will be employed for surprise and mass effect at the beginning of the attack and, during the operation, against both enemy nuclear weapon launching sites and reserve forces threatening the armored columns.

Throughout Soviet doctrine, it is standard procedure for advancing forces to by-pass or envelop strongly held points or areas. For their destruction, the doctrine prescribes constriction, splitting, artillery and aerial bombardment, and nuclear and toxic weapons.

Underlying the whole of Soviet tactics is the spirit of the offensive. The consistent aim is destruction of the enemy forces, and the offense is held to be the most direct ap-

"Large scale [Soviet] exercises over the past several years have regularly featured simulated atomic explosions and the use of chemicals, and have revealed an emphasis on night and cold weather operations. Continuous stress on rapid river crossings, using organic amphibious equipment, has brought the ground forces to a high level of proficiency in this type of operation, and has reduced their vulnerability to atomic weapons when confronted with water obstacles."

From "The Soviet Army" (A Department of the Army Assessment)
15 May 1958, page 10



Large-caliber mortars are employed as comparatively inexpensive, mobile, short-range artillery in the Soviet Army.

proach to that end. When defense is necessary or desirable, Soviet commanders are instructed to look for opportunities to go onto the

offensive, and at least to prepare an armored counterattack against enemy penetrations.

Defensive positions are to be organized as strong points by reinforced regiments or reinforced battalions. Enemy forces advancing to the attack are to be put under artillery and aerial bombardment, with nuclear and toxic weapons included as appropriate.

THE FUTURE

SOVIET military writers give no indication they believe they have solved all the problems that will

"The new gases, and the old ones as well, are frequently linked with nuclear weapons in Soviet military literature. The Soviets apparently think that employment of tactical nuclear weapons will lead to the use of toxic weapons."

"The threat to the Free World which the Soviet Army today presents is obvious. The Soviet Army is capable of: (1) Initiating a major land war to be fought without recourse to the use of mass destruction weapons, (2) Initiating an all-out nuclear war, and (3) Supplying manpower as "volunteers" and providing material support for operations in areas roughly contiguous to the Soviet Union and vulnerable to Communist exploitation. The Soviet Government can do any of these confident in the knowledge that initially it is the only major power in the world today which has the great preponderance of ground forces in being and that it has the immediate capability of mobilizing and equipping large and well trained reserves."

From "The Soviet Army" (A Department of the Army Assessment)

15 May 1958, page 14

arise on the battlefield of the future. Their theory and doctrine will grow as the new materiel and its capabilities become better understood.

Artillery, mobility, and communications appear to be the general areas in which developments can be expected in the next few years.

Improvements in missiles will extend the usefulness of what the Soviets call rocket artillery, particularly to bring all-weather fire support to deep-ranging armored thrusts. And antiaircraft missiles

probably will alter the antiair defense systems in the field as well as at home.

The trend toward improvement and increased use of cross-country vehicles and radio equipment probably will continue. The use of helicopters, amphibious vehicles, and transport aircraft, already started, is expected to expand.

In the present direction of its development, the Soviet Army is likely to maintain its capability to fight either a nuclear or non-nuclear war.





All the realism of a combat situation is simulated by the Army's

TRAINING "DM"

Major General O. P. Newman

SINCE TIME immemorial, the argument between the proponents of actual battle experience as the only worthwhile teacher and those who contend that the art of war can be taught by "pre-game" practice has waxed furiously.

And while the value of actual combat in producing a complete fighting man or organization is not to be derided, the facts of military life today are such that our Nation cannot be assured of a continuous input of skilled soldiers, hardened by combat and trained in all of the intricacies of weapons in the modern arsenal.

In developing a reservoir of combat-skilled troops, it frequently is impractical to provide extensive "service" practice with many of the weapons with which they are to be armed.

For many years homemade train-

MAJOR GENERAL O. P. NEWMAN
was Assistant Chief of Staff, G3, U. S. Continental Army Command, until his retirement in June.

ing aids and gadgets contrived from scrap lumber and baling wire did the trick. However, our equipment today is too sophisticated, too complicated to be explained satisfactorily with a pointer and a set of charts; moreover, it is too expensive to be used constantly as a training vehicle. A properly designed training device or simulator is the answer.

As an example, consider the Redstone, a ballistic missile which has recently been fitted into the Army's organizational structure. Officers and men to operate this hard-hitting but intricate weapon have been undergoing intensive training during the past year. These crews must be sufficiently expert to launch the missile effectively at a moment's notice.

A live Redstone missile should not be used for training purposes, but should be kept ready for tactical use at all times. Costs of guided missiles are necessarily high, and any damage resulting

a condition
e Arrest

“DUMMIES”

from use of tactical weapons for training could be expensive. A cheaper training device is needed.

The problem can be—and indeed has been—solved with the development of the Redstone Trainer. The story of its development typifies the contribution to realistic training being made by the United States Continental Army Command's Participation Group at the U. S. Naval Training Device Center, Port Washington, New York.

The Redstone Trainer project had its inception at the U. S. Army Ballistic Missile Agency (ABMA) at Huntsville, Alabama. There





Intricate wiring system of the training device provides operator with same problems as would the actual combat item.

the designers of the basic missile and those experimenting with training and organizational systems required to fire it effectively in the field soon realized the importance of a practice "dummy missile" to replace the hard-to-build and expensive live rounds.

Accordingly, wheels were set in motion; requirements for such a trainer were drawn up; and the U. S. Naval Training Device Center set about the task.

Only recently, the practice missile completed its initial tests at ABMA, and user tests were begun in March at the U. S. Army Artillery Board, an agency of Headquarters, U. S. Continental Army Command.

THE Redstone training dummy is full-scale, identical in internal

and external appearance to its operational counterpart. It can even be fueled like the operational missile. The components are all there—dummies to be sure—but each must be checked, adjusted, repaired or replaced, just as do the real parts. Their performance inputs and outputs read the same. If the real "black box" hisses and vibrates in operation, so too does the dummy's equivalent part. The dummies are activated by means of a "simulator."

The "simulator" is a simple piece of equipment—as simple as it is possible to design, emphasizing straight electrical circuitry and avoiding complex electronic and computing equipment. Self-contained in its own truck, it synthetically activates the operational panels in the fire control truck, simultaneously causing the dummy components of the missile to obey the designated commands.

By this means, more than 100 malfunctions in the system can be simulated to provide realistic crew training in location and repair. The operator's corrective actions, or lack of them, are automatically recorded and available for post-training critiques.

This trainer is not a toy. Its cost is substantial but cheap compared to live missile cost, and it is durable enough to withstand long, hard usage.

IN today's operational Army equipped with complex weapons, the man charged with training can no longer approach his job armed with a sighting bar, a roll of brown wrapping paper and a grease pencil. Good training equipment may be expensive, but it is nevertheless

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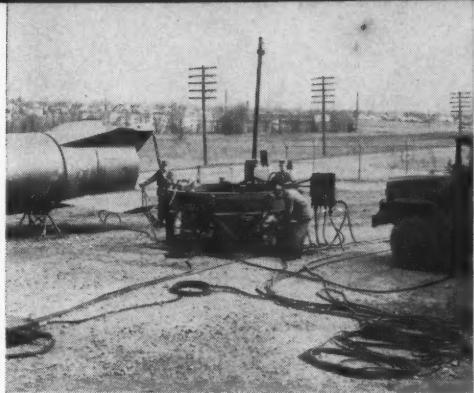
cheap when its value is measured in terms of time to get ready, lives saved and even dollars.

WHILE training aids have been used for centuries in preparing men to fight, it is only comparatively recently that the efforts of the Armed Services have been organized to produce training devices which permit the economical development of trained operators simultaneous with, or in advance of, the development of a particular weapon or equipment.

The U. S. Naval Training Device Center (NTDC) was established in 1941 to improve the effectiveness of the Navy Training Program through development and production of synthetic training devices. Since then it has developed an unrivaled competence in the field of simulators and synthetic devices, and has established broad contacts with civilian contractors with special abilities in this area.

In March 1950, the Secretaries of the Army and Navy agreed that the Army would participate in the activities of NTDC, both with people and money. Actual participation commenced in Fiscal Year 1952. The obvious economies achieved by reduction of parallel overhead organizations and by cross-service utilization were apparent almost immediately.

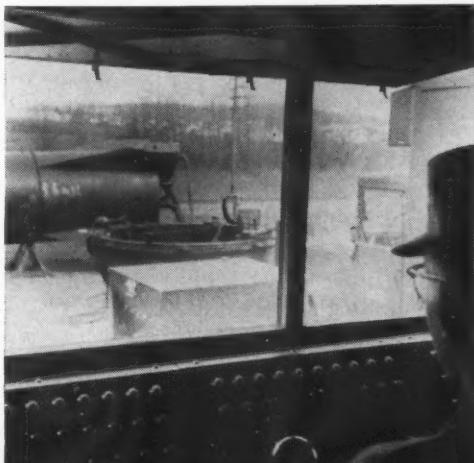
At present, NTDC is manned by some 580 civilians and 40 officers, eleven of whom are Army officers assigned to the G3 Section, Headquarters, U. S. Continental Army Command. The NTDC operation is such that a project once undertaken loses its identity as an "Army" or a "Navy" project. The project officer for development of



Above, a crew prepares dummy for tests that will duplicate actual firings at lower costs. Below, another group connects the simulator device at right to make ready for "firing."



Preparing for a "count down," an operator views the dummy missile and operational equipment from his picture window.





Controls duplicate those of a real missile to provide crewmen with realistic training in their operation.

the Redstone trainer, for example, was a U. S. Navy commander.

STILL another instance of realistic training devices provided

"The Redstone training dummy is full-scale, identical in internal and external appearance to its operational counterpart. It can even be fueled like the operational missile. The components are all there . . . each must be checked, adjusted, repaired or replaced, just as do the real parts. Their performance inputs and outputs read the same. If the real 'black box' hisses and vibrates in operation, so too does the dummy's equivalent part."

for modern complicated armament is found in the air defense field.

Nike units guarding our key cities and industrial centers must be prepared to function "right now," with a high degree of certainty and accuracy. But new men bring new problems. Training must be continuous; yet it would be inconceivable to expect the Air Force to fly simulated sorties at any hour of the day and night, in all weather, seven days a week, in order that radar operators and gun crews could be kept in a constant state of readiness.

A simulator, now in production under NTDC contract, does the trick. Not only will it simulate as many as five aircraft and one projectile target simultaneously, but it will build in all of the deceptive features inherent in ground, sea or cloud return, electronic jam-

ming, "window" interference and IFF signals.

While the simulator costs \$85,000, this is less than even a half-dozen simulated raids would cost.

With the simulator, training can be constant. Without it, resort would have to be made to lectures, books and other means which omit the realism so necessary to the attainment of combat competency.

The Redstone and Nike devices, along with all types of flight simulators, are among the more sophisticated of the Army's devices designed to make effective training possible. They do not constitute by far, however, the total output of the Training Devices Center. The list of less exotic training aids coming off the line every day is constantly growing and is no less important in the Army's effort to substitute for time, effort and lives. (See "Training Devices for Combat Realism," May 1952 DIGEST.)

A NEW family of oxygen-acetylene gunfire flash and noise simulators, for example, is now being developed. In final form, the device will cost about \$400 as compared with a \$600 price tag on an M-60 machine gun. This is not a great initial saving, to be sure, but consider that a blank round for the M-60 costs about five and one-half cents while the simulator "round" costs only six one-thousandths of a cent. Thus the possibility of bigger and more realistic maneuvers for the same number of dollars is apparent.

REALISM in training is introduced in still another area by the Army-developed war wound moulage kit. Some of these devices are

"In today's operational Army equipped with complex weapons, the man charged with training can no longer approach his job armed with a sighting bar, a roll of brown wrapping paper and a grease pencil. Good training equipment may be expensive, but it is nevertheless cheap when its value is measured in terms of time to get ready, lives saved and even dollars."

wicked-looking enough to satisfy even the most blood-thirsty; actually, they supply the training tools for field medical men so necessary to insure combat adequacy when needed.

Working through the U. S. Continental Army Command's Participation Group at the U. S. Naval Training Device Center, the Army has available a means of translating ideas on devices or aids into practical equipment for field use. It cannot be expected, however, that this relatively small group of officers will germinate all, or even most, of the ideas for useful equipment. Such ideas are usually developed, in requirement form, by the men and officers in the field—the specialists and troop leaders who are engaged in training for one of the most difficult jobs in the world.

The job which can be done in this direction is evidenced in the Redstone Trainer. The opportunity for the development of similar items which save time, lives and money is limitless.

Those life-saving "shots" which build resistance to disease and even more effective by Army Medical Service scientists in

BETTER IMMUNIZATION

Lieutenant Colonel Abram S. Benenson

THE ANCIENT Assyrian army that "came down like a wolf on the fold" was swept away almost overnight by some form of plague—

During the Spanish-American War more soldiers met death through disease than on the battlefield—

In World War I, influenza caused some 25,000 deaths among American soldiers—

SINCE recorded history the dread "pale horseman" mentioned in the Apocalypse has been the scourge of armed forces. But today a tiny needle backed by a small glass syringe is fending off the dread forays of the horseman who

for centuries had ridden roughshod and unopposed, spreading death in his wake.

Thanks to the tiny needle and its syringe—backed by extensive programs of research—immunization today has stopped, although it may not have eliminated entirely, the various diseases such as smallpox, typhoid fever, tetanus, diphtheria, influenza, which formerly decimated armies. And continued research is carried on to

LIEUTENANT COLONEL ABRAM S. BENENSON, Medical Corps, is Director, Division of Immunology, Walter Reed Army Institute of Research, Walter Reed Medical Center, Washington, D. C.



dise and infection are being made less discomforting
cient driving to achieve

THROUGH RESEARCH

provide protection against possible new pestilences.

ARMY Medical Service scientists are currently engaged in a twofold effort—to improve upon various vaccines now in use, and to improve techniques of administering them.

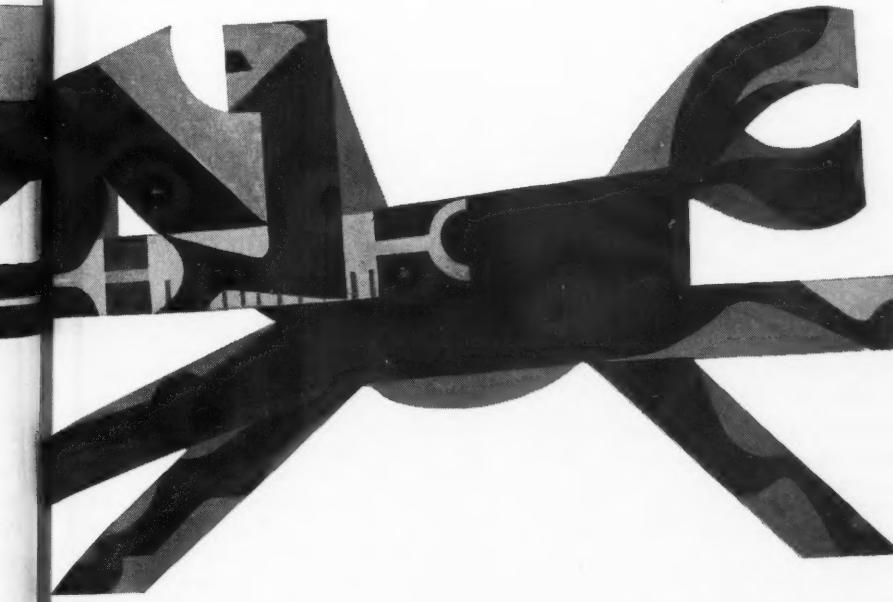
Essentially immunization consists of injecting "antigens" into the blood stream. These are prepared from disease-causing germs. The body responds by forming substances called "antibodies" which have the power to combat the specific disease.

Protection against a specific disease thus entails the injection of a

specific vaccine. To the soldier on the receiving end of the needle, it may sometimes appear that the Army Medical Service spends its time increasing the number of vaccines, and therefore the number of shots the individual must receive.

Actually, existing practices have evolved as the result of long and careful scientific study, so that immunization is offered only to those diseases where the need is real and protection definite. Research is constantly underway leading toward reduction in the number of injections to which an individual must be subjected.

One method being investigated with some success consists in com-



bining vaccines for protection against more than one disease. Diphtheria and tetanus toxoid, for instance, have been combined with typhoid vaccine. Considerable care must be taken in this endeavor, however, to make certain that combinations of materials do not result in one component interfering with the body's response to another.

Still further research is being made in new and painless methods of providing immunization. One attempt has been made to immunize a group of people by suspending the vaccine in the air as an aerosol. Unfortunately some in-

dividuals proved sensitive to the egg material in which the vaccine had been prepared, so the idea has not been pursued.

Another idea that offers more hope for success is a method of injection by a mechanical device that actually "shoots" the vaccine through the intact skin by a high pressure jet. This essentially painless process should remove much of the psychological effects attendant on administration by needle.

Continued research also is being carried on to make the vaccines more effective. This research is conducted by the Office of the Surgeon General, the Division of

A dramatic example of immunization at work—



HOW THE ARMY FIGHTS INFLUENZA

A BRIEF news item in American newspapers in mid-April 1957 brought swift reaction by the Army Medical Service with the result that, for the first time in the entire history of medicine, a world-wide outbreak of disease was fought with a vaccine specifically developed for use against it.

The dispatch told of an outbreak of an apparently new type of influenza in Hong Kong. Apparently the disease had appeared in Communist China in February, then broke through the Bamboo Curtain at Hong Kong, where 250,000 out of a population of 2,500,000 were affected.

LIEUTENANT COLONEL H. E. GRIFFIN, Medical Corps, is Chief, Communicable Disease Branch, Preventive Medicine Division, Office of the Surgeon General, Department of the Army.

The Walter Reed Army Institute of Research and the Army Surgeon General's Office immediately communicated with the Chief Surgeon of Army Forces Far East in Japan, requesting that an epidemiologist be rushed to investigate. While he was enroute to Hong Kong, a U. S. Navy aircraft carrier with some flu cases aboard docked at Yokosuka, where Army scientists obtained throat washings.

By 23 May, a team headed by Dr. Maurice R. Hilleman, Chief of the Department of Respiratory Diseases at the Institute, was able to announce that from these washings it had identified the virus—now widely known as the Asian Flu—as one strikingly different from any known strain.

Swiftly, the machinery of modern medicine went into action on several fronts. Samples of the new virus were

Immunology of Walter Reed Army Institute of Research, and the Commission on Immunization of the Armed Forces Epidemiological Board. When a vaccine has made its way through the working teams of these practical and scientific groups, the soldier may well be assured that his welfare has been the primary consideration in the decision to immunize.

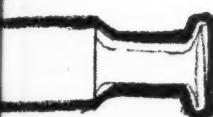
Considerable effort also is being expended to eliminate the human errors that cause infrequent incidences of illness despite administration of vaccines. In most instances, such cases are due to errors in storage of the material,

or in its actual application.

For example, experimental work is underway now to develop methods for drying and storing the living virus of smallpox vaccine so it will persist in suspended animation despite heat and time. Studies also are being conducted to develop foolproof methods of application.

Much of the present research effort is aimed at determining just how often, and at what intervals, and with what exact doses, the most effective protection occurs, to provide the greatest protection with the least inconvenience.

Repeated shots at varying inter-



Lieutenant Colonel H. E. Griffin

furnished to the U. S. Public Health Service and the National Institutes of Health in Bethesda, Maryland, for transmittal to licensed manufacturers of vaccine. The strain was rushed to the World Influenza Center in London, the International Influenza Center for the Americas of the U. S. Public Health Service in Montgomery, Alabama, and to virologists in Australia. This early and efficient action by the Army allowed the pharmaceutical industry to develop a vaccine which thus became available for civilian as well as military use far sooner than otherwise could have been expected.

Almost daily interchange of information was maintained between the medical services of the Army, Navy and Air Force to keep under surveillance spread of the disease among the Armed Forces. The story of this com-

bined work in the face of the new threat is a dramatic illustration of cooperation by the three services.

THE concern of the military establishment, the swift reaction to the news of an outbreak, and the machinery for fighting influenza all stem largely from the pandemic that occurred in World War I—an attack which struck one out of five Army personnel and had a final world-wide mortality of at least 10 million, to rank with the Plague of Justinian or the medieval Black Death, as one of three most destructive outbreaks of disease the human race has known.

While the mortality rate for Asian Flu was far less than that of the World War I variety, the attack rate was higher than any recent influenza outbreak. Attack rates of 10 to 20 per-

vals are necessary because of the manner in which the vaccines work. In some cases one shot will provide lifetime—or at least a long-term—immunity. In others, the appearance of antibodies is slow, and the quantity of the antibodies generated is low. Subsequent injections of vaccine produce the "booster" phenomenon. This is a sort of emergency reaction which results in rapid appearance of antibodies to a very high level.

Such reaction means that the first contact with antigen has sensitized the body so that it re-

sponds rapidly and effectively to re-exposure. The body also will react the same way when living germs are the antigen instead of vaccine. However, bigger doses do not necessarily give better results; small doses at ideal intervals appear to provide the best results.

Booster shots are administered from time to time to provide a continuing immunization, as in typhoid. In others, as tetanus, the booster shot is given as needed—such as when a wound occurs.

RESEARCH in tetanus vaccination

cent of the general population accompanied the sweep of the disease through the Pacific Islands and westward across Asia.

As the epidemic reached United States military units in the Far East, it was soon observed that highest rates occurred in highly concentrated units, as on naval vessels or in recruit training camps. Characteristically, close contact fostered a higher attack rate.

A companion of the high attack rate is the rapidity with which the disease spreads. After its start in Communist China, it struck Taiwan, Malaya and Borneo by mid-May and two weeks later was sweeping through Japan, the Philippines, Indonesia, India, reaching Africa and eastern Europe by June and then advancing around the world.

WHILE the spread of the disease was rapid, the speed with which it was combatted was remarkable. By September sufficient vaccine had been manufactured to allow mass inoculation of all those in uniform, as well as being made available on voluntary basis to dependents and to others for whom the Armed Forces normally provide medical care.

This inoculation program actually

was nothing new for the Army, for ever since 1942 the Armed Services have been actively immunizing personnel with influenza virus vaccine. In 1945 the entire Army was immunized, about 8,000,000 men being vaccinated within a few months. In 1957, when 1,238,000 troops were immunized, a new strain called A-prime appeared, against which the vaccine in use was not effective. The strain was not recognized until too late to allow timely vaccine production.

Army scientists have been assisted by the Armed Forces Epidemiological Board, which has served to keep alive close ties with civilian medicine developed during World War II. The Board serves the Navy and Air Force as well as the Army. It conducts research by civilian experts in many universities and institute laboratories, where studies of the influenza virus and its mutations and changes have been carried on continuously since World War II.

THE fight against the Asian Flu was marked by surveillance, investigation, immunization, and operational planning. Weekly statistical reports were received in the Office of the Surgeon General from some 200 reporting

tion typifies much of the work being done in the general field of vaccine improvement. Long regarded as one of the horrors of war, tetanus—or lockjaw—was prevalent among the wounded. During World War I all wounded men were injected with horse serum containing tetanus antitoxin. While only a few cases of the disease were observed, annoying serum sickness—hives, fever and joint symptoms—were frequent.

Improved processing techniques resulted in development of a tetanus toxoid free from horse serum.

stations around the world. Instructions were disseminated early to all these stations regarding collection and transmission of proper specimens to the central laboratory at Walter Reed, six Army area laboratories in the United States, and five overseas.

Reports of laboratory studies enabled epidemiologists to identify the disease and provide information to back up the preliminary reports. Army medical facilities also participated in civilian reporting programs, as post medical officers coordinated activities with all civilian health agencies. Coordination was closely maintained with state, Public Health Service, and World Health Organization laboratories.

Investigations were carried out to learn as much as possible about the disease and its behavior, at Walter Reed Army Institute of Research and through special investigations and observations. Many such observations were carried out by specially assigned individuals and teams. The Army Medical Service is continuing such work with technical support from the Armed Forces Epidemiological Board.

WITHIN the Army itself the Asian influenza vaccination program was put

Immunization was instituted on a service-wide basis. During World War II, only a dozen cases of tetanus were reported; of these six had not been immunized, and two had not received the booster shot at time of injury. Contrasted to this record was the development of 156 cases of tetanus among 1100 wounded non-immunized civilians in one Manila hospital. Of these 140 died.

IN OTHER areas as well, the record has been impressive. Smallpox, for example, was a difficult

into effect as soon as the vaccine became available. This was done in a two-stage program starting in September, with the second dose beginning about 15 November. The second dose was of increased potency—double the strength of the first shot.

Operational planning consisted in a review of information covering the diagnostic and therapeutic aspects of influenza—a review which was disseminated by the Army to all United States physicians. Studies also were conducted to evaluate the Army Medical Service capability to provide sufficient personnel, supplies and hospital facilities in event the disease spread more widely. Due to a substantial reserve capacity, Army hospitals were sufficient to absorb the load.

THE task of combating epidemics is a continuing one. Planning now is underway for development of a vaccine to be given this fall. It will be effective against other strains, as well as the Asian influenza.

In terms of results already achieved, and potentials yet to be realized, the Armed Forces program for study of influenza has been one of the most significant such efforts in the country, if not the entire world.



"Cubicalization" and masking in World War I hospital in France were used in attempts to halt spread of influenza which claimed 25,000 Army lives.

problem in the early history of our country. An outbreak of the disease prevented General Arnold's command from achieving victory at Quebec after a most difficult and heroic surprise move through the Maine wilderness.

During Revolutionary times, soldiers voluntarily submitted to an early form of inoculation called "variolation." This was administered by rubbing arms with another soldier who had a mild attack of the disease. Today a suspension of a living virus is applied to the skin to cause a mild local infection. The virus dies out with time. Successful vaccination protects against all known strains.

TYPHOID fever posed a greater problem to the U. S. Army in 1898 than the Spanish opposition. In 1908, voluntary immunization was begun and in 1911 it was made compulsory for all U. S. Army personnel.

Typhoid fever immunization does not provide absolute immunity but raises the resistance to infection. It does not replace good sanitation but merely fortifies it. Vaccination often is followed by aching muscles, headache and possibly fever, so that in this field intensive research is proceeding in efforts to improve the vaccine. So far, the vaccine has been dissected to yield a product that produces no aches. It has been effective on mice, but it has not been fully tested on human beings. That portion which produces fever has also been isolated and is being evaluated for its beneficial effects.

FIFTY years ago diphtheria was a serious disease of the child population but today it is possible to provide immunization that can be maintained by small repeated exposures to infection in nature. Here, however, a paradoxical situation developed whereby initial im-

Specimens are studied by pathologists at Armed Forces Institute of Pathology to provide answers in medical diagnosis.

munization was not being boosted because the disease itself had become so rare. Many individuals are again evincing susceptibility to this particular disease, with perhaps a third or more of the adult population affected.

Thus a hazardous situation results when American soldiers are stationed in an area where diphtheria is prevalent. More than 2000 cases occurred among United States troops in Germany during 1945, necessitating a large-scale anti-diphtheria campaign.

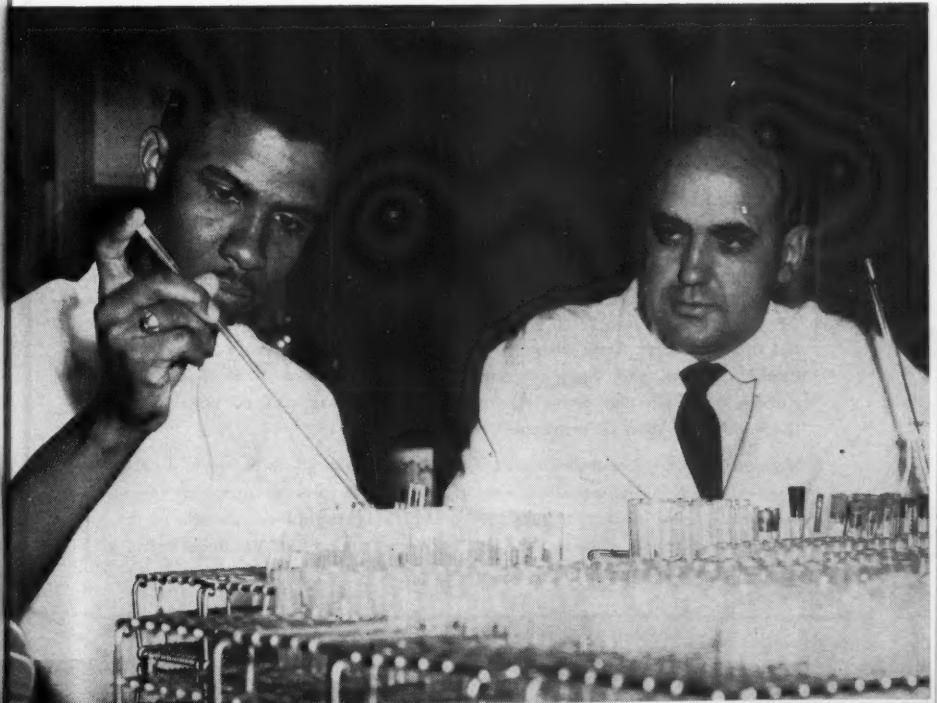
Diphtheria immunization of adults, it was discovered, may have pronounced after-effects. Investigation showed that adults frequently had an induced sensitivity that



might cause a severe reaction when the full immunizing dose was administered.

Accordingly, an investigative program was set up under the Commission on Immunization of the Armed Forces Epidemiological Board. As a result of studies at Fort Knox and at the Great Lakes Naval Training Center, it was

Dr. Maurice R. Hilleman, who headed team identifying Asian Flu virus, watches as a technician tests a batch of newly developed vaccine.



established that from a tenth to a fifteenth of the standard initial immunizing dose was sufficient to give a good response.

Further studies showed that since both tetanus and diphtheria toxoids are basically the same types of material, they could be combined by "contaminating" the standard tetanus toxoid. Thus when recruits are immunized against tetanus they get a "free boost" in immunity to diphtheria.

RESEARCH is also underway toward further reduction in the number of injections to which the soldier is subjected. Typhoid vaccine now has been combined with the diphtheria and tetanus toxoids, as noted above.

Many additional vaccines of major importance and value are available and are used when indicated against such disease threats as yellow fever, influenza, cholera, typhus fever, encephalitis, Rocky Mountain spotted fever, poliomyelitis and others.

But the very multitude of available vaccines creates a dilemma. To provide total and complete immunization would mean administering many additional shots. Serious consideration is therefore

being given to developing a method for establishing minimal sensitization to a great many vaccines so that when actual immunity is urgently needed, it may be evoked rapidly by a booster shot.

Thus it may be envisaged that a body of troops, who had already received a minimal sensitization, might be given appropriate booster shots when alerted for movement to an overseas area. In such a situation, immunization might be established within a matter of days, rather than the two to three weeks normally required. Much research remains to be accomplished to develop techniques for injecting a number of vaccines in one shot without enlarging the syringe.

WHILE the pale horseman of plague and pestilence has been overthrown, much still remains to be done to defeat him completely. A white-clad army of Medical Service scientists and technicians working with cultures, incubators, microscopes and hypodermic syringes is determined that this adversary shall be finally exterminated. To insure the victory, a continuous program of Army research in the field of immunization is carried on.

ALL United States Army personnel on active duty will receive influenza vaccine during October, and those entering on active duty prior to 1 August 1959 (including those entering active duty for training in excess of 30 days) will receive the vaccine as soon as practicable after such entry.

Vaccination on a voluntary basis also will be offered in oversea areas to dependents and to civilian employees of the military services and their dependents for whom Army medical facilities have logistic responsibility. Details of the influenza immunization program for 1958-59 are spelled out in Department of the Army Circular 40-25.

**Making available valuable program time
as a public service**

RADIO-TV TELLS THE ARMY STORY

Lieutenant Colonel George F. Havell

IT HAS long been a maxim of the United States Army that a well-informed soldier is a better soldier. At the same time, in order to assure a proper measure of support-in-depth, it is also important that his family, his friends and the civilian public generally know the Army story.

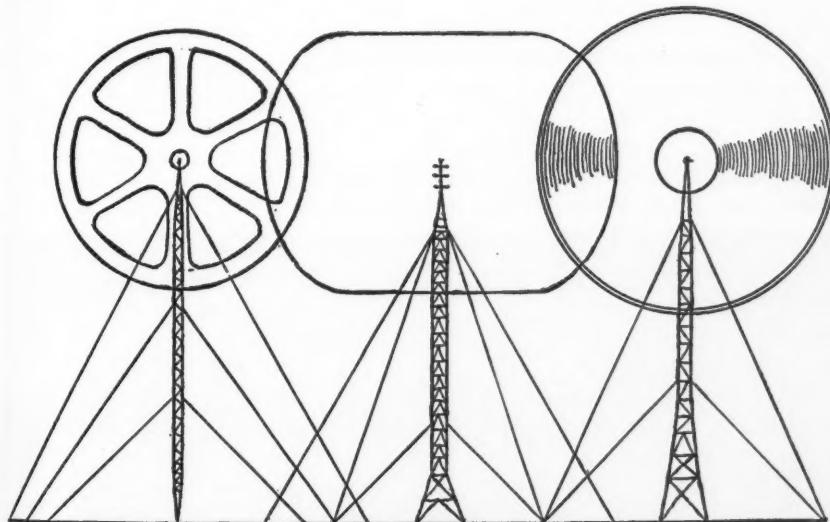
The record of the Army's far-ranging activities is a big story—

**LIEUTENANT COLONEL
GEORGE F. HAVELL, Adjutant General
Corps, is a Mobilization Designee
of the Office of the Chief of Information,
Department of the Army.**

colorful, and of infinite variety, originating in many parts of the world. For the telling the Department of the Army owes a special debt of gratitude to the radio and television industry which makes its facilities available as a public service.

The dollar value of air time freely contributed for the many Army programs would be impossible to compute; its total would be impressive. But it has never cost the Army—or the taxpayers—one red cent.

In those countries of the world



where even the air waves are a government monopoly, procurement of public-service air time presents no problem: it is a command performance. But in the United States, where radio and television is a private enterprise, every radio and TV station is free to pick and choose among the almost infinite variety—and quantity—of material offered by would-be sponsors. And while every station, under Federal Communications Commission standards, must devote a proportion of its time to the public welfare, the actual choice of what it will carry and what it will omit is made by the station, and only by the station.

Any brief review of public service broadcasting in the Army's behalf must necessarily be restricted to programs, both radio and TV, which are produced or disseminated at Department of the Army level. To include the part played by neighboring radio and TV outlets in support of the local information effort of almost every Army installation stateside and overseas would be an overwhelming task.

"THE ARMY HOUR"

SINCE 1953 the Mutual Broadcasting System has aired "The

The famed U. S. Army band frequently provides live music for "The Army Hour," one of the programs telling the Army's story.

"Army Hour" weekly on its coast-to-coast radio network. This 30-minute program also reaches service personnel, wherever they may be, through the world-wide facilities of the 140 Armed Forces radio stations. These are organized into four networks: Armed Forces Network in Europe (AFN); Far East Network (FEN); American Forces Korea Network (AFKN); and Caribbean Network (CFN).

Production of "The Army Hour" is the responsibility of the Troop Information Division of the Office of the Chief of Information (CINFO), Department of the Army. The working staff—incredibly small considering the impact of the program—consists of the producer and the script writer, both civilians, and the SFC-announcer. This group not only gives editorial direction to "The Army Hour" but the do-it-yourself principle extends to actual preparation of the network master tape and numerous copies for independent stations carrying the program.

At the heart of each production are on-the-spot reports of two of the many facets of far-flung Army operations. The tapes, recorded locally, are forwarded to CINFO for editing. One recent program,





Members of the U. S. Army Chorus prepare for a live TV appearance that also will be filmed for civilian and Army stations.

for example, was based on the presentation of a United States Army flag by Secretary of the Army Wilber M. Brucker to General Douglas MacArthur at Governor's Island in an impressive ceremony.

The range of coverage is wide; at the other extreme is the personal story of Private Otto Reykowitch which, told in his own rich accent, has a very special appeal to every man who has ever received "Greetings" from the Government:

"I was sixteen and half years old. The Germans come to Czechoslovakia

and she drafted me in the army. I was on the Russian front . . . the war is over . . . I go home. And the Russians come . . . and the Russians drafted me in the Russian army. I don't like the Russian Army . . . and I go to Austria . . . I make AWOL, ja. In Vienna I was five years AWOL. I was by United States Consul in Vienna. Then I work here on farm . . . and like same thing they drafted me here in the Army, too. I was here seven months. ja, no one can accuse me of being a draft dodger."

At the same time "The Army Hour" brings entertainment to the troops and the civilian audience. The staff is fortunate in having at its disposal the official bands of the United States Army: the United States Army Band and Chorus; the United States Army Field Band and Chorus; and the United States Military Academy Band of West Point. Part of each program is "Army Guest House" which presents talented soldier entertainers, and from time to time visitors from the Navy and Air Force contribute.

The end of each program carries a "commercial" about such matters as Medicare, the Code of Conduct,

"The record of the Army's far-ranging activities is a big story—colorful and of infinite variety, originating in many parts of the world. For the telling the Department of the Army owes a special debt of gratitude to the radio and television industry which makes its facilities available as a public service."

Servicemen's and Survivors' Benefits, the Army Cooperative Training Program, or announcements of a current nature. The air of insistence, associated with advertising commercials, is conspicuously absent.

In addition to the regular weekly program of documentary reports and music, "The Army Hour" produces each year special shows for the Army's anniversary, the West Point anniversary, and for Christmas. A special series devoted to the various regions of the United States has employed the rich talents of such professional actors as Douglas Watson, Tod Andrews, Maria Riva, Cab Calloway and Richard Kiley.

For four successive years "The Army Hour" has been awarded the George Washington Honor Medal by the Freedoms Foundation. In 1954 the winner was "I Am The American Soldier," a history-spanning narrative of our Army from Lexington and Concord to Korea. The 1955 award was given for the story of Revolutionary War soldiers as told in their actual diaries. In 1956 the award winner featured Maria Riva in a dramatic reading of a story by Robert Trout, "Only in America," with patriotic musical selections by the Army bands. The 1957 award went to a program in which soldier diaries were continued through World War I.

HOME TOWN RADIO-TV

THE United States Army Home Town News Center at Kansas City, Missouri—subsidiary activity of CINFO—sends news of individual soldiers to home town news outlets. While releases to newspapers predominate, the Center also distrib-

utes to radio stations tape recordings of three-minute interviews secured by local Public Information personnel in Army installations the world over. These are furnished only to radio stations which have indicated a desire to receive them; currently some 2300 stations in the United States, Alaska and Hawaii are on the mailing list.

The Center is now making an experimental beginning with short filmed interviews for home town TV use.

"THE BIG PICTURE"

FOR MORE than seven years "The Big Picture," weekly documentary television series of the Department of the Army, has been carried as a public service feature by TV outlets in the United States, Alaska, Hawaii, Puerto Rico, Cuba and Canada. Currently it is being featured by some 329 stations.

Two unique distinctions are enjoyed by "The Big Picture"—it appears on more TV outlets than any other program, whether in the public service field or of a commercial nature; moreover, it is used by more than one station in several of the established local TV "market areas."

Since it started in 1951, more than 230 individual episodes of "The Big Picture" have appeared. It is produced at the United States Army Pictorial Center, Long Island City, New York, under direction of the Public Information Division of CINFO.

Most releases are based upon some one phase of present-day Army activity although historical themes are also used from time to time. Scripts are prepared by professional writers under contract

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Produced by Army technicians, TV sequences for "The Big Picture" go out over civilian as well as Army outlets to dramatize the Army's story.

Where the subject demands, special footage is procured; for example, a Signal Corps photographer recently traveled throughout the Pacific area to secure material for episodes now in the editorial stage. For other episodes, readily available stock footage is appropriate. In either case, the "actors" are active duty Army personnel; professionals are rarely used.

Generally speaking, background music and sound effects are obtained from resources of the Pictorial Center library. Host-narrator for most episodes is Master Sergeant Stuart Queen of CINFO. Narrators have included Edward R. Murrow, Alexander Scourby, Pete Roberts, Kani Evens, and Phil Tonkin. Running time is 28 minutes, 40 seconds.

Because many of its viewers are

civilians, the treatment of every theme is carefully kept on a non-technical plane. For troop showing, releases are distributed to the 22 TV stations now operated by the Armed Services in various overseas locations. No special provision is made for troops within the continental United States, most of whom may be presumed to have access to conventional TV outlets.

Insofar as possible, the subjects selected for "The Big Picture" are essentially timeless. In consequence, prints which have been televised are returned to Army Film Exchanges where they have a long and vigorous life.

For "Operation Mercy," a 1957 production dealing with the Army's reception of Hungarian refugees at Camp Kilmer, New Jersey, "The Big Picture" received the Freedoms Foundation award.



An additional responsibility of the Public Information Division of CINFO is to handle contacts on behalf of the Department of the Army with radio and TV networks. Recently "Monitor," weekend radio feature of the National Broadcasting Company, has devoted considerable attention to Army affairs.

RESERVE RELEASES

THE theme "Strength in Reserve" runs through a series of seven black and white documentary films professionally produced for the Office of Chief, United States Army Reserve and ROTC Affairs. The films are adapted to screen showing and TV. Running time of each is just under a half hour.

In addition to the documentaries, there are three related films, two of them in color, primarily intended for Reserve recruiting. The six-months Reserve program has become so well accepted that recruiting has ceased to present any serious problem. Accordingly commercials in the current output of Reserve subjects are, in trade jargon, described as "soft-sell."

Latest type sound cameras are used to record home-town television reports on soldiers all over the world.

Representative of the documentary films is "The Invincible Armor," final release in the series. Narrated by Walter Cronkite, this film emphasizes that a trained military force backed up by a strong Reserve force in readiness is "the invincible armor" of national defense. The commentary makes the point that weapons alone are inadequate protectors and that the man behind the gun is the real power against the enemy, even in today's atomic age.

The films, which incorporate some rare historic footage, are narrated by such commentators as Edward R. Murrow, John Cameron Swayze, John Daly and Walter Cronkite.

This distinguished series of documentaries received first prize in the Americana Division from the Freedoms Foundation in 1956. In 1955 a single documentary, "The Whites of their Eyes" was awarded the George Washington Honor Medal by the Foundation.

NEWEST project of the United States Army Reserve is a 26-week sports show series, "Jimmy Powers Press Box Favorites," for TV showing. Each film print is five minutes long, including a 20-second recruiting message. For areas where there is a recruiting requirement a special clip is included which may be dubbed into the program or offered as a separate "commercial" on public service time.

In this series, Jimmy Powers, nationally famous sports writer and commentator, recounts the

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Tape-recorded interviews from the field prove popular with home-town radio audiences.

moments he will never forget in big league baseball, Big Ten football, track, tournament golf, and other sports, when Strength in Reserve meant the difference between victory and defeat. The films are being widely distributed to TV outlets through local facilities of the Army Recruiting Service.

RECRUITING BY RADIO

IN varying degree, other Army agencies are concerned in their radio and TV output with something akin to institutional advertising. The Military Personnel Procurement Division, Office of The Adjutant General, has a never-ending selling job. Operating through the United States Army Recruiting Service, it makes extensive use of air time contributed by the radio-TV industry as a public service.

All Army Recruiting programs are aimed primarily at teen-age listeners and in consequence they depend heavily upon popular music, with appropriate commercials. Talent is supplied by active-duty personnel and professionals; production is by contract.

Two half-hour network radio shows are broadcast weekly over the facilities of the American Broadcasting Company—"At Ease," which is easy-to-listen-to-music featuring the United States Army Band Orchestra and Chorus; and "Charlie's Inn," popular music with Pfc Charlie Applewhite.

THERE are also three 15-minute musical shows recorded for weekly



radio use on disks. Newest of these is the "Lindsay Crosby Show," in which the youngest son of the famous Bing appears as disk jockey. Backed by the United States Military Academy Orchestra, Pfc Crosby also sings popular favorites on several shows.

The music of the United States Army Band Chorus is heard on "Forward March" which includes popular concert arrangements interspersed with songs.

Top western and hillbilly artists record "Country Style U.S.A." in a program of the type so familiar to air listeners.

AVAILABLE to all radio stations through Army Recruiting Main Stations is the "Holiday Album of Music" played by the United States Army Band and Chorus and appropriate for the principal holidays of the year. The recruiting commercials are in no way dated and the album is a prized possession of many stations, to be used over and over.

Also offered to radio outlets is the new "RCA Gold Standard

"Because of the cooperation extended by the radio and television industry, an awareness of the Army's role and mission, and its importance to the Nation's security, has become a vital factor in the households of virtually every soldier and citizen."

Series," a set of thirteen 45-RPM pressings of RCA-Victor records that have sold over one million copies. Included are such favorites as Tommy Dorsey's "Song of India," Benny Goodman's "Oh, Lady Be Good," and Glenn Miller's "In The Mood." Each recording, introduced by Martin Block, well-known radio personality, varies from four to six minutes in length, including the commercial.

The services of Mr. Block have been enlisted as Chairman of the "Disk Jockey Corps." In recognition of the numerous disk jockeys who have supported the Army's recruiting efforts on their regular programs, the Recruiting Service issues a membership card. A working kit, containing a variety of short written commercials, is supplied to each of the 3200 members of the "Corps" when they join. In addition, radio stations receive spot disks carrying jingles and announcements. Many of these incorporate the catchy Recruiting Service song, "Opportunity Man."

TV RECRUITING

TWO television shows are offered by the United States Army Recruiting Service, both scheduled for 26 weekly showings. A half-hour variety show, "Get Set Go," features Richard Hayes, Sue Ane

Langdon, the Fort Dix Orchestra and Chorus, the Army Chorus, and other top civilian and soldier talent. The aim of this filmed TV show is to provide a high quality of entertainment, plus the essential commercials.

The 15-minute "Country Style U.S.A." is the TV counterpart of the radio show which bears the same name. Here again leading entertainers appear, including Faron Young, Minnie Pearl, Red Foley and other "Grand Ole Opry" favorites of the western and hillbilly enthusiasts.

Both shows have appeared on about 150 stations. All television stations are serviced with TV clips of 60-second length or less and slide copy announcements.

NATIONAL GUARD SHOWS

WITH interest in the teen-age group as well as prior-service personnel, the National Guard Bureau counts heavily upon music. Its television programs, professionally produced under contract, are star-studded, especially with "name" dance bands.

Longest established of the National Guard radio programs (since 1948) is the weekly half-hour "Lombardoland, U.S.A." with Guy Lombardo's band performing over the Mutual Broadcasting Company network. The Air National Guard appears as sponsor. The Bureau has responsibility for both air and ground elements of the National Guard.

Network facilities of the American Broadcasting Company carry a second half-hour weekly broadcast of dance music—the "Henry Jerome Show"—which is sponsored by the Army National Guard.

Widely aired on individual radio stations is "Let's Go To Town," a series of six 15-minute musical shows, each with a top dance band and a well-known guest star. Music for the present edition of the series is provided by Johnny Long, Buddy Morrow, Les and Larry Elgart, the Glenn Miller Orchestra (directed by Ray McKinley), Tony Pastor and Ray Coniff. Singing stars are Jill Corey, Les Paul and Mary Ford, Joni James, Helen O'Connell, Patti Page and Rosemary Clooney.

Short spot announcements by other leading entertainers are made available to radio stations. Two of these were recently made by Joan Bennett and Gloria Swanson, both addressing a message to the mothers of young men.

On television, the National Guard Bureau offers "The Jill Corey Show" consisting of eight 15-minute films featuring Mundell Lowe, guitarist, the Dick Hyman Trio, and Jill Corey, 22-year-old star of radio, TV and records. Each program consists of all-time popular music written by a favorite American songwriter.

Except for the network shows, distribution of most of the National Guard Bureau programs is made through State Adjutants General.

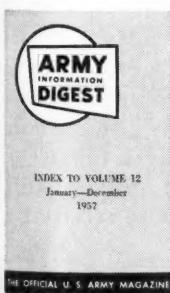
Because station schedules are subject to frequent change, no specific program times are cited here. Readers are advised to secure further information from local newspapers or directly from the stations in their area.

The National Guard finds—in common with the United States Army Reserve—that recruiting has ceased to be a pressing problem. Thus the commercials on the National Guard Bureau programs are largely designed to build prestige and good community relations.

RADIO-TV COOPERATION

FOLLOWING the practice established during World War II, transcriptions of many of the most popular radio network programs, and prints of TV shows, with commercials deleted, are furnished without charge through cooperation of the networks and sponsors to the Armed Forces outlets overseas. The importance of this contribution to troop morale can hardly be overstated.

Reflecting upon its radio-TV activities in the field of Public Information over the years, the Department of the Army may well take satisfaction in the degree of acceptance accorded its air programs. Because of the cooperation extended by the radio and television industry, an awareness of the Army's role and mission and its importance to the Nation's security has become a vital factor in the households of virtually every soldier and citizen.



THE INDEX to Volume 12 of Army Information Digest has been printed and distributed. Organizations, libraries or individuals desiring to maintain their files may obtain a copy by direct request to the Editor, Army Information Digest, Cameron Station, Alexandria, Virginia.



***Alert young candidates step smartly ahead
with academic and military training provided at this***

Prep School for West Point

SERVING as a "stepping stone" for personnel of all the Armed Forces, the U. S. Military Academy Preparatory School prepares servicemen to pass the entrance requirements for the U. S. Military Academy at West Point and the newly established U. S. Air Force Academy.

Servicemen attending this school have two things in common—first, the desire to attend a service academy and second, the common bond gained through previous service in the Armed Forces of their country.

The school conducts a rigorous academic and military training program and maintains very high standards. But the odds are excellent that those who complete the course will eventually be standing trim, erect, and proud as members of the Corps of Cadets at either the U. S. Military or the U. S. Air Force Academy.

Training is provided in both academic and military fields. The academic area helps the cadet candidate to prepare for the entrance examinations; the military training consists of instruction in basic military subjects designed to teach the candidate how to adapt himself to military life. Besides indoctrinating him in fundamental military skills, this phase prepares him mentally, morally and physically to receive the more intensive training given by the Academies.

ESTABLISHED in 1946, the school is now located at Fort Belvoir, Virginia. It is the only West Point preparatory school available to active duty personnel holding candidate nominations to either the Military or Air Force Academy. The Navy maintains a similar preparatory school at Bainbridge, Maryland, for young men desiring to attend the U. S. Naval Academy at Annapolis.

Qualified enlisted men, who are interested in seeking admission to the U. S. Military Academy under the Regular Components quota (Regular Army and Regular Air Force) may apply for this training under the provisions of AR 350-55.

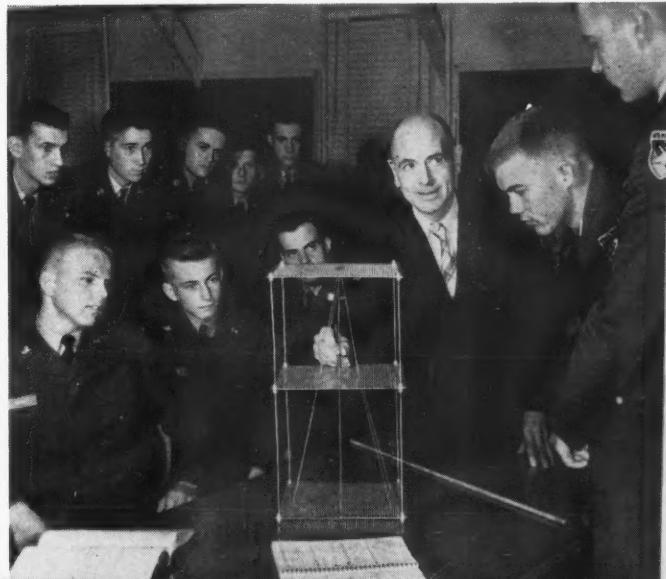
Following are some typical sights and scenes on the unique campus at USMA Prep.



Before hitting the books, a candidate carefully checks over his uniforms.



A candidate wearing insignia of first sergeant makes a last-minute check prior to formal inspection.



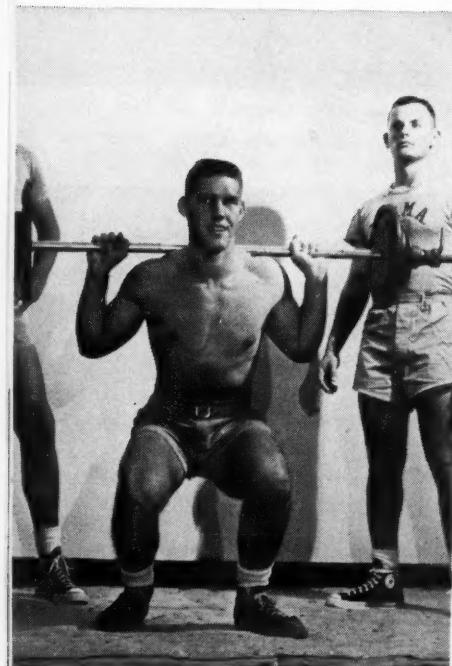
A civilian instructor uses a visual aid to illustrate a mathematics problem.

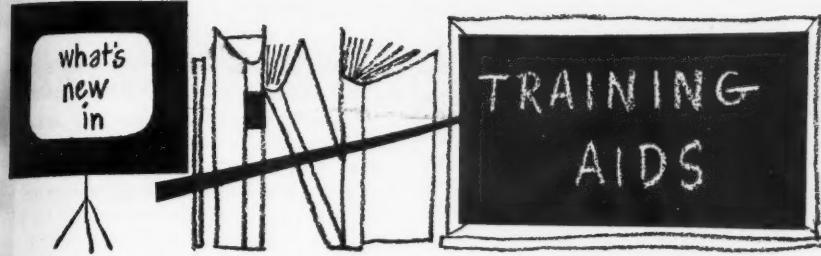


Building strong bodies goes hand in hand with military and academic training. Here candidates take part in a fast game of touch football.

Individual as well as team sports are popular, as these weight lifters show.

With a heave ho! candidates put their backs into a tug of war.





Keep your organization current with the latest training materials by referring to this section in each issue.

TRAINING LITERATURE

While the following new literature will be published shortly, units are cautioned *NOT* to requisition copies until receipt of automatic initial distribution or the items are listed in DA Pamphlet 310-3.

Field Service Regulations. FM 100-5, FSR—Operations, now being processed for publication, will present broad principles and provide a conceptual base for military operations doctrine. Other field service regulations and staff officers' field manuals of the 100-series are being revised during Fiscal Year 1959 to present vital changes in doctrine and organization necessary for the modern Army in the field.

Cadet Drill. FM 22-5A is authorized only for the United States Military Academy. It is ideally suited to occasions when impressive ceremonies are desired.

Atomic Ammunition for Field Artillery Gun and Howitzer Units (U). TC-6-() is a guide for commanders of field artillery gun and howitzer units. It prescribes functions pertaining to atomic ammunition and establishes procedures to insure maximum reliability, flexibility, and timeliness in the execution of fire missions.

Revisions scheduled for publication:

FM 17-50 "Armor Logistics," a revision of 1951 edition.

FM 23-5 "US Rifle, Caliber .30, M1," a revision of 1951 edition.

TRAINING AIDS

Training Films recently released include:
TF 7-2438 "The 106mm Rifle M40A-1—

Part VI—The Stadia Sight."

TF 7-2551 "Counterintelligence in Combat."

TF 9-2533 "Front Band Adjustment of Hydramatic Transmission 302M."

- TF 11-2553 "Radiotelephone Procedures—Operation."
- TF 11-2491 "Radio Set AN/GRC-26- (*)—Part III—Operation Power Plant and Starting Operation."
- TF 11-2563 "Radio Set AN/GRC-26- (*)—Part IV—Setting Up Receiver as Frequency Standard."
- TF 11-2564 "Radio Set AN/GRC-26- (*)—Part V—Preparing Transmitter for Operation."
- TF 11-2569 "Radio Set AN/GRC-26- (*)—Part X—Adjustment for Dual Diversity Reception."
- TF 11-2570 "Radio Set AN/GRC-26- (*)—Part XI—Tuning Transmitter Using Whip Antenna."
- TF 11-2571 "Radio Set AN/GRC-26- (*)—Part XII—Partial Shutdown and First Echelon Maintenance for Operator."
- TF 16-2518 "Personal Integrity."
- TF 30-2555 "Transmission Security."
- TF 44-2174 "The Nike-Ajax Multi-Channel Data Recorder—Part I—Operation."
- MF 10-8878 "Classification of Quartermaster Property."
- MF 20-8900 "Safe Driving in Europe."
- MF 21-8933 "Launching of Explorer."
- SFS 5-154 "Fixed Bridge Maintenance—Part I—Non-Standard Bridges."

ARMY EXTENSION COURSES

New Subcourses recently published:

Evacuation and Transportation of the Sick and Wounded. Med Subcourse 7. U. S. Army Medical Service School. Medical principles involved in evacuation of sick and wounded in a theater of operations; transporting patients by manual and litter carriers, by motor and rail; organization, functions, and employment of helicopter ambulance units; troop carrier and Military Air Transport Service aeromedical evacuation organization and procedures.

Dental Administration. Med Subcourse 84. *U. S. Army Medical Service School.* Authorization for dental care; standards of various types of required physical and dental examinations; dental appointment systems; use of civilian personnel in dental facilities; career management for dental personnel; application of work simplification principles to dental service.

Medical Aspects of Military Law I. Med Subcourse 104. *U. S. Army Medical Service School.* Jurisdiction and composition of courts-martial; examination of court-martial charges and allied papers; Summary Court; investigation and disposition of charges by superior commanders. Review of summary and special court-martial records; admissibility of hospital records as evidence; Federal Tort Claims Act.

Military Government. Med Subcourse 110. *U. S. Army Medical Service School.* Duties and responsibilities of G5 and field grade officers in discharge of military government functions during combat and occupation phase; relationships with civilians, with particular reference to Geneva Conventions; organization, function, and mission of military government public health teams; major health problems in occupied and liberated areas.

Organization and Functioning, U. S. Army. CAMG Subcourse 29. Civil Affairs and Military Government School. A general study of Army organization to show how CAMG officers integrate their specialties in the overall Army effort.

Civil Affairs and Military Government Economic Functions. CAMG Subcourse 63. Civil Affairs and Military Government School. CAMG Property Control, Public Finance, Food and Agriculture, Commerce and Industry, Civilian Supply, and Price Control and Rationing functions.

Civil Affairs and Military Government Public Facilities Functions. CAMG Subcourse 66. Civil Affairs and Military Government School. CAMG Public Works and Utilities, Public Communications, and Public Transportation functions.

Civil Affairs and Military Government Special Functions. CAMG Subcourse 71. Civil Affairs and Military Government School. CAMG Public Information; Displaced Persons; and Arts, Monuments and Archives functions.

Principles of Government. CAMG Subcourse 72. Civil Affairs and Military Government School. Theories of government and pub-

lic administration and their practical CAMG application at policy-making level.

Introduction to Civil Affairs and Military Government in a Theater of Operations. CAMG Subcourse 74. Civil Affairs and Military Government School. Organization of a CAMG National Headquarters and its relation to other commands; assignment of personnel within headquarters; general policies with respect to operation and planning for CAMG supply activities at the national level.

Civil Affairs and Military Government Staff Procedures. CAMG Subcourse 81. Civil Affairs and Military Government School. Methods used to handle data for policy decisions; principles of military staff functioning as applicable to the CAMG National Headquarters.

Economics in Civil Affairs and Military Government Operations. CAMG Subcourse 83. Civil Affairs and Military Government School. Economic aspects of the CAMG mission; restoring the economy and directing productive efforts to attain U. S. objectives.

Civil Affairs and Military Government Relationship to United States Foreign Policy. CAMG Subcourse 87. Civil Affairs and Military Government School. Theory of international relations; power position of the United States; methods by which the United States determines and implements foreign policy; role of CAMG in implementation of foreign policy.

Revisions recently published:

Medical Service in a Theater of Operations. Med Subcourse 2. U. S. Army Medical Service School. A revision of 1957 edition.

Medical Records and Reports. Med Subcourse 27. U. S. Army Medical Service School. A revision of 1952 edition.

Hospital Statistics. Med Subcourse 205. U. S. Army Medical Service School. A revision of 1953 edition.

Communication Center (Army). Sig Subcourse 65. U. S. Army Signal School. A revision of 1956 edition.

Preparation and Conduct of a Field Exercise—Rifle Platoon in the Attack. Inf Subcourse 21. U. S. Army Infantry School. A revision of 1947 edition.

Port and Wharf Construction. Engr Subcourse 306. U. S. Army Engineer School. A revision of 1955 edition.

Post Engineer Management and Supervision. Engr Subcourse 330. U. S. Army Engineer School. A revision of 1951 edition.

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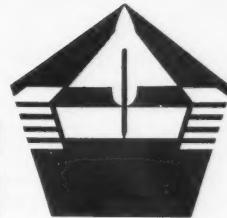
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PARAGRAPHS from the Pentagon and the Field



Amphibious Exercise

Exercise Rocky Shoals, an Army-Navy amphibious training exercise, will be conducted from 2 to 11 November on the West Coast. A landing under simulated combat conditions will take place on the coast near San Simeon, California, after which operations will be conducted in the vicinity of Hunter-Liggett Military Reservation, Camp Roberts, and Hearst Estate.

Enlisted College Training

Applications for enrollment in civilian educational institutions under the Army Enlisted Training Program are being received now for terms beginning next year. The number accepted will depend upon projected needs of the respective training agencies and availability of funds. To be eligible, the soldier must have completed a year of service, be a high school graduate and be able to complete his special training before the age of 35.

During the first two months following initial announcement of the new college training program, more than 700 applications were received from enlisted personnel. Forty-one candidates have already begun two-year courses at the Technical Extension Division, Purdue University, Fort Wayne, Indiana, and the Milwaukee School of Engineering, Milwaukee, Wisconsin. Upon completion of training, they will be assigned to duties in the guided missiles and special weapons fields. Training is under sponsorship of the Army Chief of Ordnance.

Pentomic Communications

The Signal Corps is conducting tests at the U. S. Army Electronic Proving Ground, Fort Huachuca, Arizona, to determine how much and what kind of communications will be used in the Army's new Pentomic Infantry Division.

The new division has ten centers of communication within its organization. These are normally used for division main, division advance, division trains and the five battle groups, while the remain-

ing two are employed to meet the needs of division artillery, Corps and Army support elements and division brigade.

The tests are expected to determine the extent to which very high frequency (VHF) radio relay systems will answer the mobility problem. VHF radio relay trunks provide communications between the division centers at the Proving Ground where a phantom Pentomic Division is in the field. A Test Control Headquarters will produce simulated problems which might arise in combat, such as the loss of one or more of the centers by enemy action or radio jamming. The data-gathering and analysis—being performed under contract by the Radio Corporation of America—will include similar tests on the new Pentomic Armored and Airborne Divisions.

Irradiated Food Tests

Test servings of irradiated foods in a program that will continue for two years, has begun at Fort Lee, Virginia, using foods selected and approved under direction of The Quartermaster General and The Surgeon General of the Army. The tests will consist of a series of meals in which one or more irradiated food items will be served, just as at regular meals. Some 240 volunteers are participating.

Radioactive Testing Area

The U. S. Army Chemical Corps School at Fort McClellan, Alabama, has made available to outside agencies its radioactive testing ground. Installed in 1954 as a research testing ground for problems that could not be solved at the actual A-bomb sites (since radioactivity from nuclear explosions would not remain effective for long periods of time), the main test area is a tract approximately 600 yards long and 250 yards wide, containing 400 point-sources of radioactive cobalt. Each of these sources can be raised from its own small well when desired. The area is primarily a training site for members of all branches of the

Armed Forces and officers from other nations who are enrolled at the School.

Though it will continue to serve as a training area for the Chemical Corps School, other service schools and military agencies may request use of these facilities through channels to the Chief Chemical Officer, Department of the Army, Washington 25, D. C.

Sport Parachuting Authorized

Designed to increase interest in parachute activities, Army Regulations 95-19 authorizes Army personnel to participate, with proper safeguards, in specified sport parachute activities. Previously parachute jumps were prohibited except in connection with official duties or in case of emergency.

The new regulation was issued in recognition of a growing enthusiasm for amateur sport parachuting in the United States. The sport has been popular in Europe for a number of years. Now several private and collegiate parachute clubs have been organized in the United States under the aegis of the Parachute Club of America, an affiliate of the National Aeronautic Association. The new Regulations outline safety and technical requirements for jumping conditions whereby Army personnel may organize and administer their own sport clubs; they also permit Army personnel to participate in competitive and exhibition activities as members of a PCA-sanctioned civilian parachute club.

Permanent Enlisted Promotions

Renewal of permanent enlisted promotions will begin early in Fiscal Year 1959, to provide stability to noncommissioned officer and specialist grades now held on a temporary basis. Permanent enlisted promotions have been suspended outside combat zones since August 1950, and within combat zones since July 1952. The plan provides for a permanent base within each grade, composed of fewer spaces than now authorized; these permanent spaces will be phased in on a quota system, and will be filled on a "best qualified" basis. Selection will be limited to E-5—sergeant and specialist second class—and above by Department of the Army. Permanent appointment to lower grades will be controlled at company level. No actual grade changes will result.

Vehicles On Order

Contracts totalling approximately one hundred million dollars have been let or are on bid by the Army for military trucks and trailers to fulfill needs for fiscal year 1958. Truck contracts in approximate quantities include Willys Corporation, Toledo, Ohio, 250 mechanical mules; Chrysler Corporation, Detroit, 3,200 $\frac{3}{4}$ -ton and 1,000 1-ton military trucks; Utica Bend Corporation, South Bend, Indiana, 5,000 $2\frac{1}{2}$ -ton military trucks; and Mack Trucks, Inc., Allentown, Pennsylvania, 32 heavy military trucks. In addition competitive negotiations are being completed for 3,000 5-ton trucks; and nationally advertised bids are being accepted on 350 semi-trailer gas tankers, 700 $\frac{3}{4}$ -ton cargo trailers, 3,000 $1\frac{1}{2}$ -ton cargo trailers, 75 $3\frac{1}{2}$ -ton cable trailers; 630 $2\frac{1}{2}$ -ton chassis trailers.

Commodity Center

With responsibility for world wide operations to furnish general supply type items, the Army General Supplies Commodity Center has been established at the Richmond Quartermaster Depot, Richmond, Virginia. The move is part of the overall decentralization program of Quartermaster supply operations. The Center will be concerned with catalog direction, specification review, determination of requirements, direction of procurement, inventory management, distribution and disposal of assigned items.

TV for TIP

A closed circuit television system was used for the first time recently as part of the scheduled troop information program for soldiers in the U. S. Army Signal School Regiment, Fort Monmouth, N. J.

"Rare and Unusual"

A more effective method has been introduced into the Army for identifying and assigning recruits with "rare and unusual" qualifications, as well as those possessing high aptitude area scores. As set forth in Army Regulations 611-612, a screening procedure carried on at reception stations or in training activities provides for identification and reporting of personnel by name, thus assuring that proper consideration is given special talents in determining individual assignments after basic combat training.

Nuclear Power Plant for Alaska

Construction of the first Army nuclear power plant to be used in field operations has begun at Fort Greely, Alaska. Contract for the APPR (Army Package Power Reactor) has been awarded to Peter Kiewit Sons' Company, Seattle, Washington. The plant will provide both heat and power for the Army post at Fort Greely, located about 85 air miles southeast of Fairbanks, on the Alaska Highway. The plant is modeled after the prototype unit at Fort Belvoir, Virginia, which has been in operation since last spring.

When completed the plant will produce 42 million BTU per hour in steam for space heating, and about 1,700 KW of electricity—sufficient for a town of about 2,000. The APPR is first of a family of nuclear power plants under development by the Atomic Energy Commission and the Department of Defense for use at remote military installations.

Demolitions Aid

Rapid attachment by Engineer troops of special explosive charges on steel, wood or concrete surfaces is made possible through development of a powder actuated, gun type stud driver. The new driver is designed primarily for attaching canvas bags containing explosive charges to the surface of structures that would normally be encountered in demolition missions. It is a repeater type capable of making ten separate fastenings without reloading. The gun was developed by the Engineer Research and Development Laboratories and Ramset Division of Olin Industries, Incorporated.

Power Through Warmth

Batteries developed for use in low-temperature areas are expected to stay in service ten times longer through use of a battery vest which employs human body heat to keep dry cells warm and active. The idea, developed by the Signal Corps Research and Development Laboratory, Fort Monmouth, New Jersey, calls for carrying the cells in a garment worn beneath parkas of radio operators. Keeping the batteries warm prevents loss of power in extreme cold. The vest has been undergoing field tests in Alaska.

Air-Support Shelter

The air-support principle is being applied to a missile checkout shelter now under design by the Army Quartermaster Corps. Made of lightweight fabric, the shelter is secured to the missile by a slide fastener and is anchored to the ground with stakes. A $\frac{3}{4}$ horsepower motor-blower inflates the shelter and keeps it distended while the crew works on the missile. The shelter is quickly dismantled by pulling a drawstring; the ensuing outward rush of air forces the shelter away from the missile.

Aerial Smoke Screen

A new aircraft smoke tank that permits jet planes to lay down a smoke curtain for concealment of paratroop jumps and other combat operations, has been developed by Army Chemical Corps scientists. The smoke tank can form a complete curtain from 500 feet altitude to the ground in about 25 seconds.

Official Notes

SMALL ARMS COMPETITION. AR 622-10 outline conduct of small arms competitive marksmanship programs, up to and including National Rifle Association Regional Tournaments and the National Matches.

SAVINGS PROGRAMS. AR 608-15A outline policy and procedures for uniform conduct in the promotion of a continuous educational savings program that covers both U. S. saving bonds and the Soldiers'

MILITARY JUSTICE. AR 22-12 set forth policies concerning disciplinary proceedings under the Uniform Code of Military Justice against persons who previously have been tried within the meaning of Article 44, Uniform Code of Military Justice, in a State or foreign civil court.

ENLISTED ASSIGNMENT. AR 614-240 set forth the conditions under which enlisted personnel may be reassigned between units of the Army, and establishes procedures to be followed.

SUMMER TRAINING CAMPS. ATP 145-6 spells out in detail the authority, objective, conduct and duration of general military science summer training camps of the Reserve Officers Training Corps.

INFANTRY SCHOOL. AR 350-127 set forth the mission, organization, operation and functions of The United States Army Infantry School at Fort Benning, Georgia.

CLASSIFICATION. AR 611-255 prescribe policy for selection of enlisted men for classification and interview positions at reception stations and training centers.

SAFETY MANAGEMENT. AR 690-12 establish responsibilities and provide a uniform procedure for the central maintenance of an occupational inventory of United States citizens employed in the field of safety management within the Department of the Army.

ENLISTED TRAINING PROGRAM. AR 350-260 establish a civilian-type training program for selected career enlisted personnel in technical, scientific and managerial areas.

GUIDED MISSILE TRAINING. AR 611-231 prescribe procedures by which enlisted men may volunteer for training and subsequent assignment to guided missile battalions and their direct support companies.

ARMY SAFETY PROGRAM. AR 385-20 prescribe standard procedures governing the organizational placement of command safety elements throughout the Army, and enumerate the general responsibilities and duties of commanders and safety personnel.

MANDATORY TRAINING. AR 621-109 establish mandatory requirements for Ranger, Airborne, or Army Aviation Flight Training which is required for all officers as soon as practicable after commissioning in the Regular Army and completion of the branch basic course.

SAMPLE SURVEY. AR 600-45 establish the Sample Survey of Military Personnel as a periodic requirement, enabling prediction of characteristics on the entire military population by means of a relatively small sample.

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Down to Earth Developments

Improved Aerial Delivery System

A NEW TYPE "drop kit" capable of absorbing tremendous shock has been developed by the Army Quartermaster Corps for more efficient and economical delivery of heavy equipment by parachute. Consisting of an expendable platform made of plywood and honeycombed paperboard, the new kit costs about one-tenth and weighs about one-half as much as present types. It can be quickly assembled in the field to fit individual items of equipment.

The new system is composed of a platform skid, paperboard honeycomb and an independent extraction system for pulling the platform out of an aircraft in flight. The entire expendable platform measures less than nine inches high.

A carpenter, using commercially available lumber and plywood, can build an expendable platform in a few hours. Paperboard honeycomb is then attached, and the platform is placed in a cargo aircraft. Equipment to be airdropped is driven or towed onto it and lashed in place. Cargo parachutes are attached directly to the equipment.

The expendable platform is not a load-bearing platform. It provides only a base to contain the honeycomb shock absorbers. The paperboard honeycomb dissipates the kinetic energy during impact.

THE new system makes it possible to increase greatly the safe drop rate of equipment, resulting in vastly increased accuracy and reduced cost in getting airborne equipment to the intended spot.

The faster the equipment drops, the less it will drift. Drop speed is increased by reducing the number of cargo parachutes used.

Under standard air-drop procedures, the maximum safe rate of descent is 25 feet per second. With the new system, equipment lands safely at a descent rate of 45 to 55 feet per second.

PLATFORMS used in the new system cost approximately \$95, compared to \$700-plus for standard platforms built commercially of aluminum and wood, and intended for repeated use. The combat expendable platform is built cheaply enough to be completely expended after one drop in a combat situation. Even so, some have been used successfully in 10 or more separate airdrops.

Developed by the Quartermaster Field Evaluation Agency at Fort Lee, Virginia, the system is currently undergoing static tests by the Engineer Research and Development Laboratories, Fort Belvoir, Virginia.

*(For views of antitank gun and jeep mounted
on "drop kit," see back cover.)*



THE U. S. ARMY—A KEY TO PEACE